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**PIRMSSKOLAS PEDAGOGIJA**  
*Preschool Pedagogy*

# TRENDS OF IMPLEMENTATION OF RESEARCH-EXPERIMENTAL ACTIVITIES IN PRESCHOOL EDUCATIONAL INSTITUTIONS OF UKRAINE IN TODAY'S CONDITIONS

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**Abstract.** *The article characterizes the current state of implementation of children's experimentation in preschool pedagogy of Ukraine. The results of a survey of pedagogues of preschool educational institutions regarding the peculiarities of the organization and implementation of the functions of research-experimental activities of preschoolers have been given.*

*The authors carried out definitive analysis of the concepts of the research «children's experimentation», «research-experimental activity». The content and features of the organization of research-experimental activities of preschool children have been clarified, taking into account the psychological-pedagogical publications of modern foreign and Ukrainian scientists and the available creative pedagogical experience. Examples of researches and experiments for preschool children have been offered.*

*Materials and methods. Theoretical (analysis and synthesis of scientific sources, generalization and systematization) and empirical methods (survey) have been used in the process of research. The authors conducted a questionnaire in order to find out the state of the organization of children's experimentation in preschool educational institutions.*

*Results. As a result of the research, it is established that almost the third of the respondents are afraid to change the traditional system of preschool education, namely the transfer of «ready-made» knowledge to children, which becomes the main obstacle to the introduction of experimentation into educational practice.*

*Conclusions. Based on the analysis of pedagogues' surveys, the study of theoretical and practical experience, trends of implementation of children's experimentation in preschool educational institutions in today's conditions have been determined.*

**Keywords:** *research-experimental activity, children's experimentation, educational process of preschool educational institution, preschool children, educators.*



## **Introduction**

During the last decade, world educational systems have been changing and improving in accordance with the demands and needs of modern society, science, culture and economy. In this regard, the problem of forming from an early age of such abilities and skills, competences of a person as the ability to learn, observe the surrounding world and find the ways to safely use its resources for the development of civilization, becomes extremely urgent.

The key competences that children acquire in preschool education institution become the basis for further learning in school and higher education institution (Pirozhenko et al., 2021; Kruty et al., 2021). These competencies are formed during various types of activities, but the only type of activity that provides an effective influence on the formation of all competencies is experimentation.

Children's experimentation is an activity specially organized by the pedagogue or children, in which children who obtain preschool education, through independent discovery, problem solving, practical transformative actions using various research methods, master one of the key competencies, namely research, which continues in primary school and throughout life (Karuk, 2020).

The organization of experimentation stimulates the desire for cognition and assimilation of new knowledge, promotes the development of creative and intellectual abilities. It also helps children learn how to independently find ways out of difficult situations, answer problematic questions, and promotes their artistic-aesthetic, physical, and communicative development.

In the process of experimentation, the child gradually masters the model of research activity – from the initial formulation of the problem to the subsequent proposal of the hypothesis and its verification by research and experimentation. At the preschool age, the child has access to the techniques of the simplest planning of an experiment, comparative analysis of observed processes, obtained results, etc.

The main objective of the publication is to present the results of the study of the peculiarities of the implementation of children's experimentation in preschool education institutions of Ukraine in today's conditions.

## **The theoretical background**

In the context of our research, studies that determine the specifics of pedagogues' work in the process of organizing research-experimental activities with preschoolers are important. Thus, in the studies of I. Skalstad, E. Munkebye, the development of interest of children aged 4–8 years during experimental activities in various natural environments in the open air is analyzed, and the role of pedagogues in supporting this interest is also considered. It is found out that children's interest evolves through three phases, each of which is characterized

by a specific attitude to the specific natural element, and teachers can actively influence this process by demonstrating their knowledge and establishing social and cognitive relationships (Skalstad & Munkebye, 2022). In addition, many researchers note the importance of pedagogues acquiring professional competences, in particular, the ability to properly organize communication with children in the process of research activities as a key factor for children's education (Gitomer & Zisk, 2015; Spektor-Levy, Baruch, & Mevarech, 2013; Thulin & Redfors, 2017).

Researches by M. Fridberg, A. Jonsson, A. Redfors, S. Thulin discovered that an effective pedagogue should be able to take into account the point of view of children and the object of learning at the same time, finding the ways to support interaction between them. Additionally, successful learning requires balanced use of scientific concepts (Fridberg, Jonsson, Redfors A., & Thulin 2019). Analysis of scientific researches proves that preschool children show more interest in research activities when they feel uncertain about their knowledge, when the information they observe is contradictory (Bass et al., 2022; Bonawitz et al., 2012; Cook et al., 2011; Köksal et al., 2021; Sobel et al., 2022; van Schijndel et al., 2015).

Research by E. Lapidow, C. M. Walker focuses on the study of trends in the implementation of research-experimental activities with children from four to six years of age. Their work examines the issue of children's choice of informative actions and generalization of accurate conclusions based on the results of their own observations in the process of studying cause-and-effect relationships. The results indicate that children have a pronounced tendency to choose actions aimed at revealing the true cause-and-effect structure, to draw conclusions, to formulate conclusions that correspond to the revealed results. The research also takes into account the possibility that the success of children's independent choice may be related not only to the tendency to achieve the desired effect, but also to the development of scientific thinking and self-learning at the early age (Lapidow, & Walker, 2020).

Ö. Köksal, B. Sodian, H. Legare studied the extent to which 5-6-year-old children can consciously evaluate the effectiveness of evidence in a situation where causal relationships are ambiguous. The results of the research showed that preschoolers asked for additional information more often when faced with ambiguous evidence, which indicates their ability to consciously understand the informational content of the evidence (Köksal, Sodian, & Legare, 2021).

The works of M. Sobel, D. Benton, Z. Finiasz, Y. Taylor, D. S. Weisberg explore a new aspect of children's learning through exploratory games. The authors conclude that the degree to which children can learn from their own exploration during playing may depend on how the game unfolds (Sobel, Benton, Finiasz, Taylor, & Weisberg, 2022).

## Methodology, organization and results of the research

In the research, we used theoretical (analysis of scientific sources on the research problem, generalization, systematization and organization of theoretical provisions of the researched problem) and empirical research methods (survey). In order to find out the state of the organization of children's experimentation in a preschool education institution, a survey was conducted in April 2023, in which 42 pedagogues of preschool education institutions of the city of Vinnytsia participated (preschool education institution No. 10, preschool education institution No. 23). The survey was conducted in e-environment (Google form). The content of the survey provided for the identification of educators' awareness of experimentation as a type of children's activity, its organization and use in the educational process.

The analysis of the results of the survey showed that 34 respondents of pedagogues of preschool education institutions have the most comprehensive definition of the concept of «children's experimentation» (an activity specially organized by the pedagogue or children, in which children who obtain preschool education through independent discovery, solving problem tasks, practical transformative actions using various research methods master one of the key competencies, namely research, which continues in primary school and throughout life). At the same time, other interviewed educators, namely 6 respondents and 2 respondents, chose incomplete definitions (2 and 4), which indicates a superficial understanding of the organization of experimentation (Table 1).

Table 1 Results of the survey «What is children's experimentation?» (made by authors)

Activity specially organized by the pedagogue or children, in which children who obtain preschool education through independent discovery, solving problem tasks master one of the key competencies, namely research.	34 respondents
Activity of the pedagogue in the course of which children obtain new knowledge, abilities, skills, necessary for their development.	6 respondents
Activity of a child in modeling other type of activity with entertaining or educational purpose.	2 respondents

The teachers' answers to the question «How often do you use research-experimental activities with children?» were relevant for our research. This made it possible to claim that the majority of preschool teachers often organize children's experimentation, which is already one of the leading activities of preschoolers. 24 respondents of preschool education institutions answered that they organize experimentation 1-2 times a week, 12 respondents – constantly, 4

respondents – 5-6 times a week. The share of educators who do not use research-experimental activities is 2 respondents (*Table 2*).

*Table 2 Results of the survey «How often do you use research-experimental activities with children?» (made by authors)*

constantly	12 respondents
5-6 times a week	4 respondents
1-2 times a week	24 respondents
don't organize at all	2 respondents

The results of the survey showed that children’s experimentation is most often organized during the following educational areas according to the Basic Component of Preschool Education (2021): «Child in natural environment» – 37 respondents, «Child’s game» – 19 respondents, «Child in the world of art» – 18 respondents, «Child in sensory-cognitive space» – 15 respondents. The least experimentation is organized by educators in the following educational areas: «Child in society» – 11 respondents, «Child’s personality» – 10 respondents, «Child’s speech» – 3 respondents (*Table 3*). The majority of respondents answered that children's experimentation is organized during the educational direction «Child in the natural environment», because it is through such activities that direct interaction with the environment and familiarization with objects of living and non-living nature, as well as with natural phenomena, takes place. Therefore, research and experimental activity of preschoolers in nature is the basis of empirical knowledge of the environment, a source of knowledge and the development of cognitive interests.

*Table 3 Results of the survey «When studying which educational areas according to the Basic Component of Preschool Education (2021) do you organize children’s experimentation?» (made by authors)*

Educational area «Child’s speech»	3 people
Educational area «Child’s personality»	10 people
Educational area «Child in society»	11 people
Educational area «Child in sensory-cognitive space»	15 people
Educational area «Child in the world of art»	18 people
Educational area «Child’s game»	19 people
Educational area «Child in natural environment»	37 people

Important for our research were the opinions of pedagogues of preschool education institutions regarding the value of organizing children’s experimentation in a preschool education institution. The answers were quite diverse, but what was common among them was that they all are aimed at the child’s independent knowledge of the environment, as well as at the development of a personality. For example, «there is a desire to independently learn something

new, to develop own abilities, imagination. Such activity develops mental processes important for the child in the future, fine motor skills»; «helps children get to know the environment; pedagogues to find new forms of work for the comprehensive development of the child»; «preschoolers get to know the environment, expand their worldview, this contributes to the self-development of children. Also, experimentation has a positive effect on the emotional sphere, the development of creative abilities»; «preschoolers learn about the environment in an interesting and easy way for themselves. They develop interest in the environment, a picture of the world is formed, all mental processes develop»; «this is a very good way for a child to gain life and scientific experience by independently carrying out certain actions» and others.

To the question «Why, in your opinion, children's experimentation is not actively enough introduced in the educational process of the preschool education institution? » respondents gave the following answers:

- time constraints, insufficient amount of materials;
- educators' fear for the child's safety, lack of proper knowledge about children's experimentation and its proper organization;
- children really like research-experimental activities, so everything depends on the pedagogue's wishes;
- lack of literature and clear methodological recommendations regarding the organization of such type of activity as children's experimentation;
- pedagogues' underestimation of the importance of such activities for children; insufficient preparation both theoretically and methodologically; during experimentation, educators try to «get everything right» and thereby deprive preschoolers of the right to make a mistake;
- no equipment and conditions;
- traditional is not always effective, experimentation is an innovative type of children's activity;
- the initiative of educators is at a low level; material support of preschool education institutions is minimal;
- experimentation requires awareness and creativity of the pedagogue;
- a preschool education institution has a program according to which educators work, and introducing something new is problematic for pedagogues and children, especially early age children.

## **Discussion**

Based on the analysis of the survey of pedagogues, we consider it necessary to note that during the implementation of various educational areas, prerequisites are created for the organization and implementation of experimentation in preschool education institutions. Although the fear of pedagogues to change the

traditional system of preschool education, namely the transfer of «ready-made» knowledge to children, is the main obstacle to the introduction of experimentation into educational practice.

The organization and implementation of experimentation as one of the leading types of children's activities into the educational process of preschool education institutions will ensure the development of cognitive interests and needs of preschoolers, as well as stimulate the development of all psychic processes and mental operations. It is the educator who motivates children, asks them problem-searching questions and tasks, organizes elementary research-experimental work, during which preschoolers independently master competencies that reflect the system of interrelated components of the child's physical, mental, social, and spiritual personality development and are formed according to all educational areas according to the Basic Component of Preschool Education (Karuk et al., 2021, 2022).

So, children's experimentation is a complex type of activity, during which the child's key competencies are formed, namely: personal, subject-practical and technological, sensory-cognitive, logical-mathematical and research, natural-ecological; abilities and skills oriented towards sustainable development arise: game, social-civic, speech, artistic-speech, artistic-creative. This activity is not given to a child by an adult in advance in the form of a scheme, but is built as new information about the object is obtained. And this is the basis of the extraordinary flexibility of children's experimentation, the ability of children to rearrange their activities depending on the results obtained. The activity of experimentation is characterized by the complication and development of goal-setting actions. The next important point of children's experimentation is that in order to achieve new goals set by the child, new ways of transforming objects are needed. Their search takes place by testing old methods, combining and rebuilding them. Therefore, trial and error is a mandatory and most important component of children's experimentation. Such activity is characterized by extreme flexibility, that is, the children are free from those restrictions that are offered by adults, as well as "obtrusive" purposeful learning. And therefore, children's experimentation also has a creative character, contributes to the formation of an extraordinary, creative personality.

So, the fundamental fact of children's experimentation is that it permeates all spheres of life of preschoolers and all types of children's activities. The leading motive of children during research-experimental activities is their focus on obtaining new knowledge, information about subjects and objects of the environment.

In order to introduce experimentation as a type of children's activity into the educational process, we have developed recommendations for preschool educators regarding the organization of children's experimentation:

1. Taking into account the age and individual peculiarities of children.

2. Determination of the content of children's experimentation in accordance with the developed skills, level of development of cognitive activity, abilities and interests of preschoolers.
3. Acquaintance and compliance of children with safety rules during experiments and tests.
4. Observance by the pedagogue and children of the stages of experiments and tests.
5. Prohibition on conducting tests and experiments that may harm the health of children and the environment.
6. Availability of special devices and materials placed in the children's experimentation center or mini-laboratory.
7. Systematicity in conducting children's experimentation.
8. Combination of children's experimentation with regime moments and other types of activities in a preschool education institution.

Currently, it is worth organizing work with children with experimentation, supplementing with materials from centers or mini-laboratories. Pedagogues of preschool education institutions should set themselves the following goal: to prepare children for school who are capable of creatively solving problems and tasks, expressing assumptions, and finding ways out of problematic situations. The criterion for the effectiveness of children's experimentation is not the quality of the result, but the characteristic of the process, which is objectified into intellectual activity, cognitive culture and valuable attitude to the real world. The given recommendations on the organization of children's experimentation are not exhaustive, they can be supplemented and complicated.

Since our research was carried out in the context of Jean Monnet Module EcoEdEU-101085524 «Ecological education of preschool and primary school children: a European approach» (the main purpose of which is to prepare future pedagogues to master the theoretical and methodological foundations of organizing the process of ecological education of preschoolers and primary schoolchildren) and PEGEU-101085248 «Preschool education in a green environment: the synergy of European practices and Ukrainian traditions» (the main purpose of which is to increase the competence of pedagogues, theoretical and practical training of students to organize work with preschool children in the conditions of green environment in combination of the best experience of Europe and Ukrainian traditions), we defined the main principles of training educators to organize children's experimentation in a preschool education institution:

- the principle of the contextual approach (which encourages modeling professional training based on real practical problems, using different contexts of professional activity, and allows students to see «the feasibility and necessity of knowledge and skills in everyday or future situations of professional activity» (Myronchuk, 2018):

- the principle of a multidisciplinary approach (which allows testing a wide range of ways of implementing professional activities (in our case – the organization of children’s experimentation in a preschool education institution) from the standpoint of various theoretical and practical approaches of several sciences «A multidisciplinary approach provides consideration of a research problem from different points of view. Teachers analyze the data received in the educational process and react to them in accordance with the structure and specifics of the subject being taught. Such joint work has a number of advantages: expanding the knowledge of participants in the educational process, forming and developing key and professional competencies, more effective use of study time, developing motivation to acquire professional education...the possibility of discussion between participants in the educational process, obtaining new ideas, acquiring new knowledge and skills, positive impact on the professional career» (Boichuk, & Boichuk, 2020);

- the principle of the praxeological approach. «Implementation of the praxeological approach in the educational process of higher education institutions enables the formation of a set of professionally determined knowledge and practical skills of students, which is the basis of successful activity due to the conscious choice of methods, techniques and means of work that ensure the effectiveness of work, activate creativity, encourage active creative activity» (Dzhanda, 2019).

The implementation of the mentioned principles in the course of experimental work on the formation of future educators’ skills in organizing children’s experimentation in preschool education institutions allows to improve the quality of the general professional training of future pedagogues and contributes to the development of those important personal qualities of education seekers that motivate fruitful and creative cooperation with preschool children and preparing them for studying at school.

## **Conclusions**

The trends of the implementation of children’s experimentation in preschool education institutions in today’s conditions are defined as: the use of children’s experimentation to form the child’s experience in various areas determined by the educational areas of the Basic Component of Preschool Education; expanding the contexts of the use of children’s experimentation and its integration with the development of various personal structures: from observations and experiments in nature, with various objects of the physical world, to experiments with the word (speech development, children’s occasionalisms), with an artistic image (moral-ethical, aesthetic development), with numbers and abstract concepts (the development of thinking operations); the emergence of the significant number of didactic methods and techniques based on the principles and algorithms of



children's experimentation; the creation of inherently innovative technology of the development of a child's engineering thinking, which is based on the concept of children's experimentation as a special form of perception of the world by a child.

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# DZIGORO KANO DŽUDO FILOZOFIJAS AKTUALIZĀCIJA TIKUMU AUDZINĀŠANAI PIRMSSKOLAS VECUMA (5-6 GADI) BĒRNIEM

## *Actualization of Dzigoro Kano's Judo Philosophy for Virtue Education in Preschool Children*

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**Abstract.** *The purpose of the article: in a theoretical analysis, to substantiate the usefulness of judo martial arts philosophy in the upbringing of virtues of preschool children (5-6 years old) in judo physical activities. The article examines the historical and cultural path of judo and its philosophical aspect in the education of moral qualities following the rules and self-control, managing emotions through regulators. The problem and actuality in the 21st century is the growing aggressiveness, cruelty and emotional indifference of children revealed in sports lessons. During the discussions, it was found that children do not know what virtues are. The work of sports teachers revealed that it is possible to use the principles of judo philosophy to promote the virtues defined in regulatory documents. The conducted research revealed that Judo philosophy is useful for realizing children's intellectual potential, promoting socio-emotional development, cultivating the virtues of honesty, mutual help, respect, friendship, kindness and courage in physical activities with Judo exercises. The disciplined exercises embodied in the Judo philosophy can help promote self-discipline, self-control and endurance.*  
**Keywords:** *friendship, judo, honesty, morality, respect, self-discipline, virtues.*

### **Ievads**

#### ***Introduction***

Tikumu izpratnes veicināšana ir svarīgs audzināšanas uzdevums teorijas vienībā ar praksi. Tikumu audzināšana ir aktuāla pedagogu darbā ar pirmsskolas vecuma bērniem. Kāpēc? Pētījumā (Hummel, 2022) tiek atzīmēts fakts par bērnu agresivitāti, cietsirdību, emocionālo vienaldzību, personīgo interešu prioritāti, nepietiekamu savstarpējo komunikāciju ģimenē. Arī sporta pedagoga darbā pirmsskolā ir novērota bērnu savstarpēja nesavaldība, agresivitāte, bet pārrunās ar bērniem sporta nodarbībās ir noskaidrots, ka viņiem ir maz zināšanu un pašpiederzes par tikumiem. Tā ir 21. gs. pedagogiska problēma.

Latvijas Republikas Ministru kabineta normatīvajos dokumentos (MK, 2018) ir norādīts, ka tikumu audzināšana ir svarīgs izglītošanas procesa uzdevums cilvēka, sabiedrības un valsts interesēs. Tai ir jāsekmē bērna attīstība, pasaules izpratne, uzskatu veidošanās, kas balstīta vispārpieņemtās cilvēciskās vērtībās.

21. gs. humānpedagoģijas paradigmā audzināšana ir formulēta kā nedalāma vienība, kuras funkcija ir attieksmju veidošana pret lietām, parādībām, sabiedrību (Špona, 2001, 9-16). Tādēļ jēdziena ‘tikumiskā audzināšana’ vietā, kas tiek lietots zinātniskos rakstos, šajā rakstā tiks lietots jēdziens ‘tikumu audzināšana’.

S. Lasmanes interpretējumā “latviešu vārds ‘tikums’, ‘tikumība’ ... ir lietojams gan kā ētiskā un morālā sinonīms, gan kā indivīda īpašību kopums, kas nodrošina spēju un prasmi dzīvot, attīstoties un pilnveidojot sevi attiecībās ar citiem”...“ar morāli vairāk izsaka rīcības un uzvedības sociāli normatīvo un regulatīvo praksi”...“tikuma un tikumības jēdziens attiecas uz indivīda iekšēju potenciālu dzīvot gudri, labi un taisnīgi kopsakarā ar citiem – dabu, sabiedrību, līdzcilvēkiem” (Lasmane, 2023, skirklis/6 6472). M. Kiopas skaidrojumā “tikumu izkopšana, vingrināšana (no gr.val. askēin) ir vienmēr bijusi nozīmīga Eiropas kultūras nozīmīga sastāvdaļa. Bez tikumu izkopšanas cilvēkam nav morālā spēka sasniegt labumus (vērtības). Lai baudītu, piemēram, draudzības labumu, ir jābūt uzticīgam, drosmīgam, godīgam utt. – tie visi ir tikumi” (Kiopa, 2015, b.l.). Tātad tikumu audzināšana ir cilvēka morālā spēka izkopšana. Minētie jēdzieni rakstā tiks aplūkoti Kano džudo cīņas mākslas filozofijas principu kontekstā.

Pētījumā ir izmantotas teorētiskās metodes: literatūras analīze un empīriskās metodes: novērošana un pārrunas ar bērniem tikumu izpratnes konstatācijai.

Raksta mērķis: teorētiskā analīzē pamatot džudo cīņas mākslas filozofijas lietderību pirmsskolas vecuma bērnu tikumu audzināšanā džudo fiziskajās aktivitātēs.

### **Džudo filozofijas veidošanās teorētiskais aspekts** *The theoretical aspect of the formation of judo philosophy*

Tā kā džudo filozofija ir veidojusies ilgā laika periodā Japānā, rakstā tiks ievērota kultūrvēsturiskā metodoloģiskā pieeja, lai atklātu džudo filozofijas humānismu. Tulkojumā no japāņu valodas termins džudo nozīmē ‘maigs ceļš’ vai ‘maiguma un elastības ceļš’ (Hoare, 2009). Džudo filozofijas humanizācijā svarīgs ir Dzigoro Kano (1860-1938) darbs. Izvērtējot dažādus Jiu Jitsu stilu cīņas mākslas veidus, Kano radīja jaunu cīņas mākslu ar savu filozofisko pieeju. Tā ir humāna pieeja, jo sākotnējais veco jujutsu skolu mērķis bija cīnīties un iznīcināt ienaidnieku. Kano pats sasniedza augstu cīņas prasmju līmeni, mācoties dažādās džūdžitsu skolās, par ko saņēma arī Menkyo kaiden sertifikātu par pilnībā apgūtām zināšanām (Watson, 2012). Kano skola ir nodibināta 1882. gadā.

Kano darbības laikā notiek Japānas modernizācija. Tās tradicionālās vērtības ietekmēja Rietumu sabiedrības paraugi, tādēļ valstī notika pārmaiņas industrijā un izglītībā. Pakāpeniski cīņas māksla ar spēka demonstrējumu, lai iznīcinātu pretinieku, zaudēja savu prestižu. Iemesls tam bija arī metodiku trūkums, kā arī cīnītāju traumas un apšaubāma uzvedība (Kano & Murata, 2005).

Galvenā izmaiņa džudo attīstībā bija Kano pāreja no vienkāršas džudo tehnikas pielietošanas (džiudžitsu) uz tās pārveidošanu ceļā (do). Šī iemesla dēļ Kano savu jauno vingrinājumu veidu nosauca par Nihon-den Kōdōkan Jūdō, kas vēlāk tika pieņemts kā Kōdōkan jūdō, un šodien visā pasaulē pazīstams kā džudo. Džudo Japānas sabiedrībā tika pieņemts, jo Kano izglītības filozofijas mērķis bija cienīt cilvēka mērķus un ievērot sociālās normas. Adaptējot tradicionālos cīņas mākslas paņēmienus un nosakot sociāli svarīgus mērķus, kas balstīti morāles un ētikas noteikumos, Kano identificēja džudo kā darbības veidu, ar kuru uzlabot sabiedrības kvalitāti. Definējot principus *seiryoku zen'yō/ maksimāla efektivitāte ar minimālu piepūli* un *jita kyōei/ savstarpējs labums un labklājība*, džudo kļuva par cīņas mākslas veidu, kur cilvēks sociālā vidē attīsta savu potenciālu (Kano, 1932). Džudo principi – laipnība, drosmē, gods, pazemība, cieņa, savaldība, draudzība – ir vērtība gan džudo, gan sabiedrībai.

### **Kano nozīmība džudo filozofijas tapšanā**

#### ***The importance of Kano in the development of judo philosophy***

Kano ģimene bija saistīta ar samuraju tradīcijām un seno šintoistu reliģiju. Kano studēja politiku un ekonomiku Japānas prestižākajā Tokijas Imperiālajā universitātē, kur apguva filozofiju, ētiku un estētiku, un 1882. gadā ieguva izglītību. Jau jaunībā Kano bija autoritāte, jo viņam bija zināšanas par visām cīņas mākslām atšķirībā no meistariem, kuri praktizēja tikai vienu konkrētu cīņas mākslu. Pievienojoties 1909. gadā Starptautiskajai Olimpiskajai komitejai (SOK), Kano kļuva par vadošo autoritāti sportā Japānā. Viņš popularizēja džudo vērtības, lasot lekcijas visā pasaulē par džudo principiem un mērķiem (Stevens, 2013).

Kano ieguldījums veicināja nacionālo progresu, jo viņš izmantoja džudo fiziskās aktivitātes veselības profilaksei cilvēka ikdienā. Tā džudo cīņas māksla ļāva cilvēkiem uzlabot ne tikai savu fizisko sagatavotību, spēku un elastību, bet arī tādas morālās vērtības kā cieņa, pašdisciplīna, paškontrolē un sadarbība (Kano, 2017). Šīs vērtības ir aktualizētas 21. gs. sākumā Latvijas izglītībā.

Kano savu izstrādāto džudo filozofiju pielietoja jauniešu izglītošanai. Viņa izglītības filozofija ietvēra mācīšanos, izmantojot praktisku pieredzi ķermeņa un prāta attīstībai (Bennett & Kanō, 2009). Citiem vārdiem, izglītības procesā Kano lietoja teorijas un prakses vienības metodoloģisko pieeju. Kano apzinājās, ka cīņas mākslas filozofijas humānā vērtība ir ietekme uz cilvēka intelekta attīstību (Kano, 1932). Varam konstatēt, ka, izmantojot zinātnes atziņas (Kano, 2017), tika izveidota tāda zinātniski pamatota džudo filozofija, kas ir izmantojama tagad.

D. Matsumoto (1996) akcentē, ka Kano filozofijā džudo treniņos fiziskās attīstības sekmēšanas vingrinājumi ietekmē arī cilvēka intelektuālo un morālo īpašību attīstību. Prefikss “do” (ceļš, metode) iezīmē džudo filozofisko aspektu. Šī ideja drīz izplatījās citās kaujas sistēmās, kuras savu mērķi aplūkoja ar "džitzu" palīdzību un aizstāja to ar "do". Tāpēc Kenjitsu kļuva par Kendo, Kyujitsu kļuva par Kyudo, Iaijitsu kļuva par Iaido. Aikijitsu kļuva par Aikido; karatē kļuva par karatē-do. Tādējādi Kano kļuva par cīņas mākslas un sistēmu reformatoru, mainot novecojušos samuraju mērķus cīņā uzvarēt.

### **Džudo filozofijas būtība** *The essence of judo philosophy*

Kano izveidotajai džudo sistēmai bija trīs galvenie treniņu mērķi: 1) fiziskā izglītība, 2) sacensības (shobu) un 3) pašdisciplīna (šušin-ho). Kā fiziskā izglītība džudo tika iecerēts kā aktivitāte, kas pozitīvi ietekmē ķermeņa un motorikas harmonisku attīstību. Atzīstot džudo metodikas psiholoģisko un pedagoģisko lietderību jauniešu mācībās Japānā, 1911. gadā tā tika ieviesta izglītības sistēmā pamatskolas un vidusskolas izglītībā (Kano, 1932). Jāpiezīmē, ka ķermeņa fiziskā un motorikas harmoniska attīstība ir svarīga tieši pirmsskolas vecumā.

Pašdisciplīna (shushin-ho) ir džudo augstākais mērķis. Pašdisciplīna izpaužas morālo īpašību attīstībā, intelektuālā potenciāla realizācijā un visu džudo treniņu laikā attīstīto psihisko īpašību pielietošanā ikdienā (Kano, 1917).

Džudo principi ir pārņemti no tradicionālās cīņas mākslām, jo to stingrie noteikumi un lielā darba slodze veicināja pašdisciplīnu, savstarpēju palīdzību, cieņu, draudzību un godu. Šīs īpašības tika apgūtas džudo treniņos ar stingriem noteikumiem humānu mērķu sasniegšanai. Ir pierādīts, ka džudo tehnikas paņēmieni apgūšana, nelokāmi ievērojot uzvedības noteikumus, pozitīvi ietekmē paškontroles attīstību (Hoare, 2009). Skolēniem tika izvirzīta prasība maksimāli izmantot savu potenciālu, lai iegūtu zināšanas un pilnveidotos (Kano, 1917), tādēļ Kodokan kļuva par atzītu izglītības iestādi. Kodokan pamatoja izglītību kā lielu vērtību pasaulē, jo, zināšanu līmenis paaugstinās no paaudzes paaudzē. Šī ideja parāda džudo mērķu derīgumu jebkurā sabiedrībā (Judo, 2016). Iepazīstinot ar principiem *seiryoku zen'yō* un *jita kyōe*, Kano definē džudo prakses mērķus, norādot, ka fiziskās attīstības pamatā ir fiziskie vingrinājumi, kuru mērķis ir attīstīt apziņu kustībā, bet stingrie noteikumi ietekmē raksturu un morālo stāju.

Praktizējot džudo, cilvēks garīgi un fiziski sevi pilnveido sociālā vidē. Lai sasniegtu mērķus, džudo noderīgi ir dažādi vingrinājumi. Svarīgs vingrinājums ir trenēties ar partneriem, kuriem ir atšķirīga līmeņa zināšanas. Vingrinājuma laikā ir jāpielāgojas katram pretiniekam, saglabājot savu izvirzīto mērķi (Kano, 1932). Kodokan džudo treniņi sākas ar randori un kata. Ar tiem veicina fizisko attīstību. Šis vingrinājums tiek uzskatīts par visefektīvāko veidu, kā kopt ķermeni un prātu. Džudo filozofijas vingrinājumu mērķis ir veicināt cilvēka morālo attīstību.

Kano filozofija, ko viņš prezentēja Starptautiskajā Olimpiskajā komitejā, puda savstarpējas palīdzības ideju gan starp indivīdiem, gan cilvēku grupām, gan valstīm. Tas nozīmēja, ka Kano darbība bija virzīta humānisma ideju ieviešanai globālā līmenī (Sánchez-García, 2016). Tā Kano filozofijas ietekmē dzudo kļuva par olimpisko sporta veidu 1964. gadā.

### **Džudo principu iespējas tikumisko īpašību veicināšanai** *Possibilities of judo principles for promoting moral qualities*

Vieni no džudo principiem ir godīgums un taisnīgums. Tiem ir saikne ar Rietumu bruņinieku principiem, kas ir bijis paraugs jauniešu izglītošanai. Godīgums un taisnīgums ir principi, pēc kuriem personai ir jātiecas un jādzīvo, ievērojot tos gan uzvedībā, gan spriedumus un atzīstot tos par savu morālo pienākumu. Godīgums un taisnīgums ir būtiski tikumi, kas izpaužas priekšzīmīgā cilvēka uzvedībā, neatkarīgi no viņa statusa sabiedrībā (Kuehn, 2014).

Tikumi palīdzība, mīlestība, žēlsirdība vienmēr ir uzskatīti par cildenākajiem tikumiem, par augstākajiem, ko cilvēka dvēsele spēj izpaust.

Pieklājība un cieņa ir obligāta visai sabiedrībai kopumā. Pieklājība tiek apgūta ikdienas rituālos un treniņos. Laika gaitā pieklājība ir nostiprinājusies Japānas sabiedrībā tādā līmenī, ka katrā uzrunā cilvēku uzvedībā komunikācijā tā tiek ievērota īpaši pieklājīgi. 21. gs. Japānā liela uzmanība tiek pievērsta izglītībai un morālajai attīstībai (Samardžić, 2011).

Svarīgs vingrinājums, ko Kano ieviesa treniņos, ir keiko – paškontroles attīstība. Paškontroles noteikumos bija iekļauti uzvedības noteikumi. Tās bija prasības izpildīt džudo tehniku ar maksimālu paškontroli. Paškontrolē bija mehānisms, kā nepārkāpt robežas un izvairīties no traumām. Meistarība džudo nozīmēja šīs prasmes izcilu apguvi.

Kano skaidro, ka džudo mācībā ir svarīgas cilvēka emocijas (Stevens, 2013). Cilvēkam, kurš ir iepazinis pozitīvu emociju pārdzīvojumu un negatīvu emociju pārdzīvojumu, veidojas izpratne par morālu rīcību. Lai cilvēks varētu kontrolēt emociju izpausmi uzvedībā, ir nepieciešama gribas piepūle. Jāpiezīmē, ka griba ir attieksmju veidošanās regulators audzināšanā/pašaudzināšanā (Špona, 2022).

Džudo tehnikas elementu izpilde izraisa dažādus emocionālos stāvokļus visiem iesaistītajiem. Džudo treniņa ievadā var iekļaut spēles un izklaidi, izraisot priecīgu emociju rašanos, kuras tālāk var novirzīt panākumu sasniegšanai sportā. Pastāvīgi aktivizējot emocionālos regulatorus, tiek panākta emocionālo stāvokļu paškontrolē un pašregulētas uzvedības prasme. Tādējādi daži emocionālie stāvokļi, kurus iemācās atpazīt un kontrolēt treniņos, tiek virzīti ar mērķi sasniegt iecerī (Adriana & Mircea, 2011; Supinski et al., 2014). Paņēmienu, ko sākumā var praktizēt kā spēli pirmsskolas vecuma bērniem, var pielietot pašvadītam mācīšanās procesam skolas vecumā (Brdic, 2018). Turpinot trenēties un novirzot negatīvas emocijas, īpaši agresiju, to pašu paņēmienu var virzīt uz rezultātu

sasniegšanu un uzvaru sportā. Cilvēki ar apgūtu emociju regulācijas prasmi (Decety & Ickes, 2009) spēj pašregulēt un mainīt savu uzvedību, novirzīt savas negatīvās emocijas un spēt pretoties paaugstinātam emocionāli fizioloģiskam stāvoklim, kas ir spēcīga koncentrēšanās iezīme.

Džudo treniņu laikā ir nepieciešams noteikts emociju uzbudinājuma līmenis un tā uzturēšana maksimāla efekta sasniegšanai sporta priekšnesuma laikā. Tā kā emocionālajam uzbudinājumam nav bioloģisko un psiholoģisko īpašību kontroles mehānismu, cilvēki tos attīsta savu spēju robežās. Neatkarīgi no uzvaras vai zaudējuma džudo ir jāspēj kontrolēt savas emocijas un jābūt pateicīgam otram cīnītājam par gūto mācību. Attīstot paškontroli, tiek stiprināts garīgais spēks (Kano & Murata, 2005). Tas ir svarīgi bērna emocionālajā attīstībā (MK, 2018).

Džudo aktivitātēs paklanīšanās (Rei) ir rituāla daļa, ar kuru sākas vai beidzas vingrinājums vai duelis ar partneri. Tas ir cieņas apliecinājums pretiniekam vai partnerim, jo viņš ir tieši nepieciešams neatkarīgi no uzvaras vai zaudējuma. Pareiza paklanīšanās liecina par pašsavaldības prasmi, par pašcieņu, cieņu pret pretinieku, vingrinājumu un darbību (Murata, 2020). Attieksme pret dojo (džudo treniņu zāli) ir vienāda uz tatami (paklāja), lai kur tas atrastos, - sporta zālē vai jebkurā citā telpā. Šī ētikas kodeksa daļa ir svarīga visām vecuma grupām. Starptautiskās džudo federācijas (IJF, 2017) noteikumu mērķis ir prasība ievērot ētikas kodeksa prasības un izrādīt cieņu pret pretinieku un sporta veidu.

Uzvedību pret sevi treniņa laikā nosaka pareizas pozas un disciplīna, kas akcentē uzvedības kultūru un attieksmi pret citiem un attīsta labas manieres. Attiecības ar partneri, kurš bieži ir pretinieks, attīsta paškontroli un kontroli, emocionālos stāvokļus virzot uz tehnikas efektivitāti, neizrādot negatīvas emocijas pret partneri vai kādu citu (Callan & Bradić, 2018).

Džudo kā sporta aktivitāte veicina džudistu tikumus un pozitīvu uzvedību. Paškontrolēta uzvedība ir saistīta ar emociju vadības mehānismiem, izmantojot regulatorus. Paškontroles attīstība ir process, kas dabiski notiek cilvēkā, bet ar lielāku emociju regulatoru aktivizācijas pakāpi ekstremālās situācijās, sarežģītos apstākļos, kas atklāj bīstamību veselībai, šie procesi tiek strauji paātrināti (Takšić, 2003). Līdz ar to džudo nodarbībās rodas dažādi savstarpēji saistīti stāvokļi, kas attīsta spēju vadīt paškontroles mehānismus dažādās situācijās.

Savā darbībā Kano norādīja uz audzināšanā iesaistīto pušu aktīvāku līdzdalību, bet morāles attīstību par vienu no galvenajiem mērķiem un vērtībām, kas var uzlabot cilvēka individuālo un sociālo dzīvi. Šīs atziņas ir aktualizētas Skola 2030 metodiskajos materiālos (VISC, 2019) un normatīvajos dokumentos (MK, 2018) kā pilsoniskā līdzdalība.

Kano ieteica mācīt bērniem mērenību, lai attīstītu paškontroli. Viņa (Kano, 1917) redzējumā sporta skolotājs, treneris vai instruktors ir atbildīgs gan par savu audzēkņu tehnisko un fizisko progresu, gan par garīgo un morālo īpašību attīstību. Džudo fiziskajā, morālajā un intelektuālajā treniņā ir svarīga pašdisciplīna. Pašdisciplīnai (Bennett & Kanō, 2009) ir jābūt klātesošai jebkura džudo



praktizētāja iekšējā stāvoklī, sākot no sveiciena ar paklanīšanos kā cieņas zīmi un beidzot ar paklanīšanos pretiniekam, izrādot cieņu par gūto pieredzi.

### **Rezultāti par džudo lietderību pirmsskolā** *Findings on the usefulness of judo in preschool*

Aktualizēsīm nedaudzos pieejamajos pētījumos noskaidrotās atziņas par džudo pieredzi pirmsskolas izglītībā un izvērtēsīm tās vienībā ar Ministru kabineta prasībām tikumu audzināšanai pirmsskolā 21. gadsimtā Latvijā.

Pētījumā par pirmsskolas vecuma bērnu pieredzi (Cohen & Strayer, 1996) ir noskaidrots, ka, pateicoties džudo, pirmsskolas vecuma bērni emocionāli iesaistās fiziskajās aktivitātēs un attīstās dažādās situācijās. Gods, draudzība, pašapziņa, līdzjūtība, cieņa, paškontrolē ir tikai daži no tikumiem, ko veicina džudo. Darbs ar pirmsskolas vecuma bērniem džudo (Bliznevsky et al., 2016) ir jāpielāgo bērna fiziskajām un psiholoģiskajām vajadzībām, ietverot spēles elementus, kas atslābina stresa situācijās un vienlaikus attīsta emocionālos un motivācijas faktorus. Visām sporta aktivitātēm jānotiek ar pozitīvu emocionālo fonu, neatkarīgi no tā, vai tas ir treniņš vai tās ir sacensības. Tikumu izpratnes trūkums (Stevens, 2013) izpaužas bērnu agresivitātē, tādēļ pirmsskolas vecuma bērnu tikumu audzināšana ar džudo pamatprincipos balstītām fiziskām aktivitātēm ir preventīvs līdzeklis agresivitātes novēršanai pirmsskolas izglītības iestādēs.

Normatīvajos dokumentos (MK, 2018) ir norādīts, ka audzināšana ir virzīta uz izglītojamā sociālās un kultūras pieredzes ieguvu, emocionālā intelekta attīstību un pašregulāciju, vērtību veidošanos un tikumu izkopšanu, kas nodrošinātu sadarbību un pilsonisko atbildību sabiedrībā. Pirmsskolas vecums Skola 2030 (VISC, 2019) tiek raksturots kā periods, kurā skolotājs atbalsta un mērķtiecīgi virza 5-6 gadus vecus bērnus aktīvi apgūt pašregulēšanas un pašvadības, pilsoniskās līdzdalības prasmes un ar savu paraugu ietekmē tikumu apguvi.

Atbilstīgi ontogēnēzei 5-6 gadus vecs bērns ir aktīvs, kustīgs un attīstās darbībā, tādēļ bērnu tikumu izpratnes veicināšana džudo fiziskajās aktivitātēs varētu būt lietderīga. Nav nepieciešams speciāls tehnisks aprīkojums, bez tam tas ir pieejams arī bērniem ar kustību traucējumiem. Džudo vingrinājumi būtu noderīgi arī sabiedrības integrācijai iekļaujošā izglītībā. Džudo pamatprincipi ir nemainīgi un obligāta prasība no to ieviešanas sākuma. 21. gs. ir svarīgi īstenot tādu audzināšanu, kas būtu piemērota bērnu vecuma vajadzībām. Bērniem, kuri nodarbojas džudo fiziskajās aktivitātēs (Kano, 1932, Esparento, Villamon & Gonzalez, 2011), tiek veicināti: paradumi ievērot noteikumus un pašdisciplinēt sevi, pozitīva attieksme pret vienaudžiem, saudzīga attieksme pret lietām, pašregulētas emocijas. Šādas atziņas ir arī metodiskajos materiālos (VISC, 2019) un MK noteikumos (MK, 2018), kas ir saistoši katram pedagogam.

Tā kā agrajā bērnībā notiek bērna sociāli emocionālā attīstība, vecāku, sporta skolotāju, treneru uzdevums ir veicināt bērna pilsonisko līdzdalību, iepazīstinot

viņu ar prasībām, tradīcijām un vērtībām, jo attieksmes veidojas pakāpeniski. Izvērtējot rakstā analizēto, par lietderīgu tiek atzīta Kano džudo cīņas mākslas filozofijā iestrādāto principu – godīgums un taisnīgums, pieklājība un cieņa, paškontrolē, pašdisciplīna, emociju pašregulācija – aktualizēšana bērnu (5-6 gadi) tikumu audzināšanai džudo aktivitātēs pirmsskolas izglītībā.

## **Nobeigums** ***Conclusions***

Pētījumā tika konstatēts, ka džudo filozofija 21. gs. izglītībā veicina humānas attiecības starp cilvēkiem un starp pasaules valstīm. Džudo principu ievērošana pozitīvi ietekmē cilvēka tikumiskās īpašības, trenē pašvadību, paškontroli, pozitīvi ietekmē cilvēka fizisko sociāli emocionālo un kognitīvo attīstību. Džudo tiek īstenota ideja, ka, nodarbojoties ar džudo, tiek stiprināts ķermenis un gars, cilvēkam nozīmīga kļūst pilsoniskā līdzdalība, kas džudo filozofijā ir iestrādāta kā svarīgs mērķis.

Džudo nodarbībās ar pirmsskolas vecuma bērniem pasaulē tiek pielietota Kano filozofija ar noteikumiem, kas palīdz viņiem virzīt emocijas un veicina tikumiskās īpašības. Džudo filozofijā iestrādāto principu un noteikumu ievērošana rada apstākļus, kuros pirmsskolas vecuma bērni sistemātiskos vingrinājumos mācās pašvadīt savu fizisko, intelektuālo un sociāli emocionālo attīstību un apgūst pirmsskolas izglītībā formulētos tikumus: paškontrolē, godīgums, savstarpējā palīdzībā, cieņa un draudzība.

## ***Summary***

The study found that the philosophy of judo (judo school Kodokan in Japan was founded in 1882) in the 21st century in education promotes humane relations between people and between countries of the world. Judo implements the idea that by practicing judo, the body and spirit are strengthened, civic participation becomes important for a person, which is embedded in the philosophy of judo as an important goal. Kano explained that the humane value of the philosophy of martial arts is a fundamental influence on the development of the human intellect. Using scientific knowledge, a science-based judo philosophy was created that is applicable today. Kano's judo philosophy has global value: judo has been an Olympic sport since 1964. At the preschool teacher supports and purposefully directs 5-6-year-old children to actively learn the skills of self-regulation and civic participation. Judo classes with preschool children around the world apply the philosophy of Dzigoro Kano with rules that help them channel their emotions and encourage their moral qualities. Adherence to the principles and rules embedded in judo philosophy creates conditions in which preschool children learn to self-manage their social-emotional development through systematic exercises

and learn the virtues formulated in preschool education: self-control, honesty, mutual help, respect and friendship. Thus, physical activities based on the philosophy of Kano judo support the learning of virtues in society.

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# HOME-BASED EARLY WRITING ACTIVITIES: THE PERSPECTIVE OF PARENTS IN A LATVIAN CONTEXT

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**Abstract.** *Students entering school with underdeveloped writing skills often face academic challenges. Addressing and improving these skills at the preschool level is a critical instructional goal. Early engagement in writing activities with parents and adults at home, beginning at a young age, is crucial in shaping children's writing identities and methods. While student motivation is vital in developing writing abilities, the role of parents in encouraging and nurturing these skills is equally important. This study aims to explore how parental involvement aids in developing early children's writing skills. Data were collected through surveys conducted with parents of 3-6-year-old preschoolers, focusing on their writing support and parenting practices. This research seeks to understand the role of parents in facilitating early writing activities at home. The study's primary objective is to examine parents' perspectives on enhancing their children's early writing skills within a home environment. Active participation by parents in their children's writing activities, including practices like reading together, encouraging daily writing, and providing constructive feedback, has shown positive outcomes. However, some parents reported challenges such as limited time or resources, affecting their ability to support their child's writing development effectively.*

**Keywords:** *early writing, parenting, home-based writing activities, parents' perspectives on early writing, family literacy practices.*

## Introduction

Early childhood literacy development is pivotal to a child's overall cognitive and educational progression. Early writing, a fundamental literacy component, demands careful attention and cultivation from an early age. This study delves into parents' perspectives concerning home-based early writing activities for children aged 3 to 6 years. Understanding parents' practices and beliefs in fostering early writing skills at home is crucial for educators, as the home environment plays a significant role in initiating early writing, with parental involvement being a key determinant.

This research aims to analyze survey data collected from parents, exploring the frequency and types of activities employed at home to enhance their child's early writing skills. This study contributes to a broader understanding of early

literacy initiatives within family settings by scrutinizing the diversity of approaches and parental perspectives. The findings have the potential to inform educational practices, guide parental support programs, and inspire collaborative efforts to optimize the home environment for fostering early writing skills in young children.

### **Literature review**

At approximately the age of 3, many children typically reach a stage where they can engage in scribbling activities and generate letter-like forms that resemble writing. Draw, scribble, and write, children gain an understanding of the role print plays in their lives and the way writing is used to communicate ideas (Kidd et al., 2014; Puranik et al., 2011). Despite this progress, it is important to note that, at this point, they may not have fully mastered the actual formation of letters. This phase reflects their developing understanding of the connection between making marks on paper and the concept of writing, laying the foundation for more refined writing skills in the future (Puranik, Lonigan, 2011; Graham, Hebert, 2010). Studies conducted on preschool-aged children have also demonstrated correlations between early literacy skills with later reading and writing acquisitions in the formalized literacy period in different language systems (Zhang et al., 2023; Silinskas et al., 2020).

Between the ages of 3 and 4 years old, children typically start recognizing and using some letters in their writing endeavors; for example, they may be able to write their name. One of the initial words that children commonly acquire the ability to write is their own first name (Both-de Vries, Bus, 2008). Alongside these written expressions, children might draw pictures and make initial attempts to label them by incorporating letters or marks resembling letters (Zhang, Quinn, 2020).

By the age of 5, children are expected to have acquired several fundamental writing skills. These include proper pencil grip, letter formation, letter-sound correspondence, basic spelling skills, and writing familiar words (Puranik, Lonigan, 2014). Overall, by age 5 – 6, children's writing abilities are expected to reflect a significant advancement from their earlier scribbling and letter-like forms as they gradually acquire the foundational skills necessary for effective written communication.

Children undergo a sequence of developmental stages as they embark on the journey of learning to write. These stages span from initial scribbles to mastering the ability to write their name, representing anticipated milestones in their writing development. Parents play an essential role in nurturing the early writing skills of young learners (Puranik et al., 2018). Central to this role is the need for parents to actively participate in and appreciate the joy and satisfaction derived from writing. Parents need to motivate children to express their thoughts and capture

their ideas in written form, fostering a positive and enjoyable attitude toward communication through writing (Lonigan, Shanahan, 2009). Parents support their children's writing development by participating in writing activities together (Puranik, Lonigan, 2011; Syomwene, 2022; Aram et al., 2017).

The home literacy environment encompasses literacy practices between parents and children, including shared book reading, alphabet instruction, spelling guidance for names and words, and supporting phonological awareness through rhyming games (Incognito, Pinto, 2021). These practices within the home setting hold significant meaning for the early literacy development of children (Bindman et al., 2014). Parents' general knowledge and comprehension of literacy development play a crucial role in nurturing their children's writing skills (Aram, Yashar, 2023).

From a very early age, children begin exploring writing features (Arrow, Mclachlan, 2011). Writing aids children in grasping the connection between print and sound. Moreover, each instance a child engages in drawing, painting, coloring, scribbling, or printing contributes to developing their fine motor skills. In the early years, educators and families need to offer young children experiences that develop not only letter-sound correspondence and handwriting skills, but also an understanding that the printed book is readable and that writing serves as a means of expressing their ideas.

Given that young children arrive at preschool with diverse backgrounds and experiences, educators must acknowledge the varying levels of writing knowledge and skills they bring to preschool. Children's experiences can significantly differ. Educators create equitable learning opportunities by valuing each family's unique experience and each child's interests and abilities.

When educators utilize home writing practices, children can link new learning with their existing knowledge. For instance, by understanding the various types of writing that take place at home (such as grocery lists, notes to family members, emails, and text messages), educators can integrate opportunities for children to engage in similar types of writing during instructional lessons and play experiences (Incognito et al., 2021; Septiani, Syaodih, 2021).

Promoting appropriate measures, such as raising parents' awareness of the importance of literacy in the home environment, is very important to ensure that children have ample opportunities to participate in language and literacy activities together with their parents, which in turn would have a positive impact on the child's future academic achievements (Bigozzi et al., 2023). Parental involvement significantly impacts a child's academic achievement (McDowell, Jack, Compton, 2018).

## **Methodology**

This study employed a mixed-methods research design to examine parental engagement in developing their children's early writing skills in a Latvian setting. The aim was to investigate how parents encourage and enhance their young children's writing skills in the home environment, specifically focusing on children aged 3 to 6. The data was collected by a structured questionnaire sent electronically using QuestionPro, an acknowledged online survey platform.

The survey intended to get comprehensive insights into parents' strategies, endeavors, and challenges in assisting their children's initial writing efforts. The sample consisted of 148 randomly selected parents with children between 3 and 6 years old. The survey questionnaire comprised 14 items that employed the Likert scale, ranging from "never" to "every day." These items were used to evaluate the frequency of different writing activities carried out at home. In addition, six open-ended questions were included to collect qualitative data regarding parents' thoughts and experiences. A mixed-methods approach was essential to thoroughly comprehend parental involvement in the early phases of writing development. Creswell (2014) emphasises the value of mixed-methods research: "Mixed-methods research provides strengths that offset the weaknesses of both quantitative and qualitative research. For instance, quantitative data provide a broad picture that can be enhanced and filled in with the depth and detail provided by qualitative data" (p. 215). This approach allowed for an in-depth exploration of parental involvement, combining numerical data with personal narratives to provide a more comprehensive representation.

The quantitative data were analysed using descriptive statistics to discover trends and frequencies in parents' replies to Likert-scale questions. The study provided valuable insights concerning the frequency of different writing activities performed at home and the level of parental participation. Content analysis was applied to identify and evaluate parents' comments in order to analyse the qualitative data obtained from the open-ended questions. This approach enabled the recognition of shared patterns and challenges encountered by parents in assisting their children's writing progress, thereby enhancing the numerical results with individual viewpoints and personal encounters.

## **Research results**

The survey targeted parents having children aged 3 to 6 years, and the results reveal a well-distributed age composition among the children, with 22.93% at four years old, 24.84% at 3 and 6 years old each, and 27.39% at five years old. This balanced age representation enhances the study's comprehensiveness in capturing insights into parenting practices for writing development across the early childhood spectrum.



Conducting additional statistical analyses, such as examining correlations between age and parental involvement in writing activities, holds the potential to unveil nuanced insights into the intricate relationship between age and practices fostering writing development. The diverse age distribution enhances the study's robustness, facilitating a comprehensive understanding of writing-related practices throughout different stages of early childhood.

The survey asked how they learned to write themselves; the answers often overlapped with how they currently help their children. Parents mentioned diverse sources that helped them learn to write, including schools, preschools, and family members such as mothers, fathers, older siblings, and grandparents. The importance of an educational institution can be found in many answers. Schools and preschools are frequently cited as sources of learning, emphasizing the importance of formal education in developing writing skills. Many mentioned that they learned to write in school, starting from preschool or the first grade. Teachers played a significant role in the learning process. Parental involvement is prominent, with mentions of mothers and fathers actively participating in the learning process. Grandparents, especially grandmothers, also play a role. Sibling influence is notable, with older siblings serving as examples or actively contributing to the learning process. Some individuals stated that they learned to write independently, showcasing a self-driven approach to acquiring this skill. Expressions like "myself" (pati) and "curiosity" (zinātkāre) indicate a personal motivation to learn. Reading books and exposure to written material were identified as contributing factors to writing proficiency. Acknowledging the diversity of experiences in learning to write is crucial, as some individuals vividly recall specific details. In contrast, others do not remember the exact methods employed, mentioning such answers as "do not remember" or "do not know." It shows that a blend of formal education, familial support, and personal motivation collectively played a crucial role in fostering the development of writing skills.

Parents were asked if their children see them writing daily. The majority of respondents indicate that the child sees someone writing several times a week (41.89%), followed by every day (20.95%). Once a week and once a month also have notable percentages at 17.57% and 15.54%, respectively. A small percentage (4.05%) mentioned that the child never sees someone writing.

Analyzing the data on how often a child asks how to write a word or sentence: The majority of respondents (30.41%) mentioned that their child asks several times a week, indicating a high frequency of curiosity and learning. A significant portion (25.68%) reported that their child inquires once a week, a notable number (17.57%) claimed their child never asks, and some respondents (13.51%) reported a monthly frequency, indicating a moderate level of interest in learning how to write. The smallest portion (12.84%) mentioned that their child asks every day.

Although a significant number of respondents mentioned that their children never ask them to write words or sentences. This could be influenced by various factors, such as the child's age, interests, or educational environment.

It is interesting to note the perceived differences in the contributions of various family members. Mothers seem to have the most significant impact on a child's writing development, followed by fathers and sisters, while grandfathers are perceived as having the least involvement. Based on the responses, mothers are perceived as the primary contributors to a child's writing development (52.54%), followed by fathers (12.71%) and sisters (11.02%). In comparison, grandfathers are mentioned as contributing the least among those involved (2.12%).

To improve the child's writing skills, parents describe the activities they do at home in the survey. Parents employ various methods, including using dedicated writing notebooks, drawing on chalkboards or paper, and engaging in activities that promote letter recognition and handwriting skills.

Many parents use specialized writing practice sheets, activities, and workbooks designed to enhance writing skills. This shows a proactive approach to providing structured learning experiences. There is a significant emphasis on joint activities where parents actively participate with their children. This involvement ranges from reading and drawing together to teaching letter recognition and writing techniques. Some parents incorporate creative elements, such as drawing, coloring, and playful activities, to make the learning process enjoyable for children. Parents adapt to their child's readiness and interests, tailoring activities to suit their needs. Positive reinforcement is present in responses where parents celebrate their child's achievements, providing encouragement and praise for efforts in writing. Parents use various materials, including writing tools, books, and specialized writing sheets.

The data also reflects an awareness of age-appropriate practices, with some parents introducing writing skills early on while others wait for signs of interest and readiness in their children. Additionally, sibling influence emerges as a factor, with older siblings contributing to the writing development of younger ones.

In summary, the data showcases a wide variety of approaches that parents use to foster writing skills in their children, demonstrating a blend of structured learning, creativity, and positive reinforcement within the family context.

Regarding mobile applications, the data indicates that a significant majority of parents (80.41%) never use mobile applications for developing their 3-6-year-old children's writing skills, with only a small proportion (1.35%) using such apps daily. This may suggest that parents prefer alternative methods or are not inclined to use technology for this specific aspect of their child's development. Possible reasons could include concerns about screen time, a preference for traditional teaching methods, or limited awareness of suitable applications for this age group.

In addition to parents' self-reported writing promotion activities at home, the survey included specific tasks (Fig.1). where parents indicated their engagement frequency, ranging from once a month to every day or never.

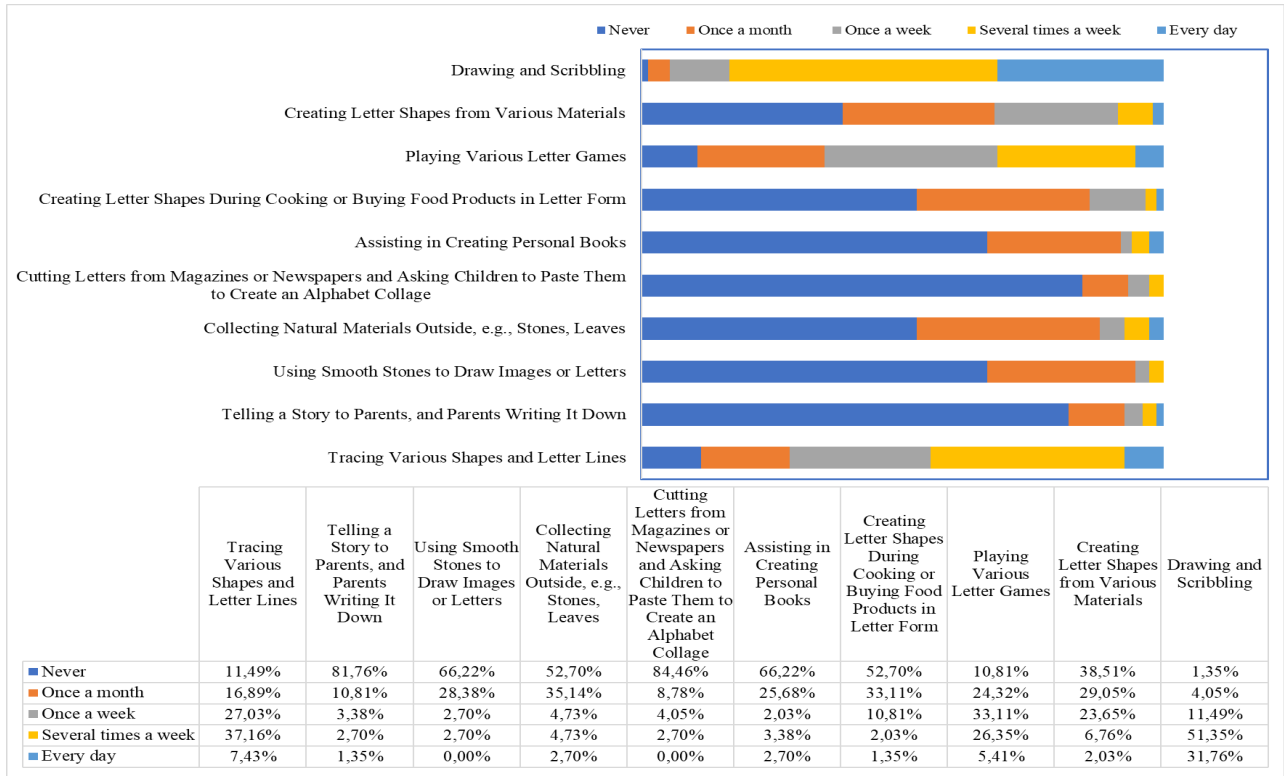


Figure 1 Parental Engagement in Writing Activities (made by authors)

Specific tasks: drawing and scribbling, creating letter shapes from various materials, playing various letter games, creating letter shapes during cooking or buying food products in letter form, assisting in creating personal books, cutting letters from magazines or newspapers and asking children to paste them to create an alphabet collage, collecting natural materials outside (e.g., stones, leaves), using smooth stones to draw images or letters, telling a story to parents, and parents writing it down, tracing various shapes and letter lines.

Over half of the parents encourage their children to draw and scribble every day (31.76%), with a significant number also doing so several times a week (51.35%). The majority of parents (38.51%) reported never encouraging their children to create letter shapes from various materials. A substantial portion (29.05%) does so once a month. A considerable number of parents (33.11%) engage their children in playing various letter games once a week. Only a small percentage (5.41%) do this every day. More than half of the parents (52.70%) reported never involving their children in creating letter shapes during cooking. The majority (33.11%) do so once a month. The significant majority of parents

(66.22%) reported never helping their children create their own books, while a smaller percentage (25.68%) does so once a month.

Another essential aspect is encouraging a supportive and diverse learning environment that caters to individual preferences can help foster a well-rounded approach to literacy development. The survey included an open-ended question about how parents set up an environment for their children that promotes early writing skills. The majority of parents (83%) actively strive to create a conducive environment for their children's writing development. This involves setting up an appropriate workspace with a suitable desk and chair, ensuring the availability of various writing accessories, and some even investing in ergonomic furniture, a blackboard in the nursery room, and adequate lighting. On the other hand, a minority (17%) has not yet made efforts to establish a dedicated writing environment. On the other hand, a minority (17%) has not made dedicated efforts to establish a conducive writing environment, instead exemplified by children using their older siblings' desks or opting for unconventional surfaces like letters on the refrigerator to play with them or fogged-up window to write during dinner preparation.

Parental involvement is widely recognized as a significant factor in a child's academic success, and gaining insights into their viewpoints regarding collaboration with teachers provides valuable information about the broader support of early literacy.

In the survey, most respondents (72%) expressed a desire to receive suggestions from teachers to enhance their child's writing skills at home. Their preferences ranged from seeking guidance on issues like teaching a child to hold a writing instrument to specific exercises tailored for home practice. Another group (21%) felt confident in addressing writing-related challenges independently or indicated that their child faced no writing difficulties. Additionally, 8% of parents reported already receiving teacher recommendations and exercises.

## **Conclusions**

The study provides valuable insights into parents' diverse practices to promote early writing skills in children aged 3 to 6 years.

Parents shared insights into their writing learning experiences, emphasizing the role of educational institutions, familial support, and personal motivation. The varied sources mentioned highlight the multifaceted nature of acquiring writing skills. Regarding children's exposure to writing, the data indicates that a majority observe someone writing several times a week, with notable frequency variations based on the child's age, interests, or educational environment. Children's inquiries about writing also vary; some show frequent curiosity, while others exhibit less interest. Perceptions of family members' contributions to a child's writing development reveal mothers as the primary contributors (52.54%),

followed by fathers (12.71%) and sisters (11.02%), while grandfathers are perceived as having the least involvement (2.12%).

Parents employ diverse methods to enhance their child's writing skills, emphasizing joint activities, structured learning experiences, and age-appropriate practices. Regarding mobile applications, a significant majority of parents (80.41%) never use such apps for their 3-6-year-old children's writing skills, suggesting a preference for alternative methods. In creating a conducive writing environment, 83% of parents actively strive to set up an appropriate workspace, including suitable furniture and writing accessories, showcasing a proactive approach.

Regarding teacher suggestions, 72% of parents expressed a desire to receive recommendations, highlighting the potential benefits of collaborative efforts between parents and teachers. Some parents (21%) felt confident in addressing writing-related challenges independently, and 8% had already received teacher recommendations.

Parental involvement in developing their children's writing skills has multiple benefits, encompassing cognitive processes related to writing, such as idea generation, vocabulary enrichment, and code-related skills like letter and sound knowledge. Correct holding of the writing tool is also essential, emphasizing the need to develop the child's gross and fine motor skills.

For several reasons, understanding how parents support children's participation in writing activities at home is critical. First, parental involvement plays an important role in writing activities, an essential aspect of literacy development, and parental support can improve a child's proficiency in this skill. Secondly, home environments significantly influence a child's learning experiences. Identifying how parents support writing activities provides insights into the resources, encouragement, and guidance children receive outside formal educational settings. Third, parental involvement in writing activities can contribute to developing positive attitudes toward learning and education. It promotes a supportive and engaging learning environment, influencing a child's motivation and enthusiasm for learning tasks. In summary, understanding parental support for children's participation in writing activities at home is critical to understanding children's holistic development, the influence of the home environment on learning, and the broader cognitive and attitudinal aspects of writing skills.

Discovering specific steps parents take to improve their child's writing skills allows educators to understand effective practices beyond preschool, allowing them to provide more targeted and comprehensive recommendations and strategies. Educators can also use this information to create collaborative initiatives, encouraging parents to participate in their child's writing development actively. This knowledge can help develop adaptive and inclusive teaching methods that recognize and build on children's diverse home experiences.

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# ATTITUDES OF PARENTS AND TEACHERS TOWARDS MATHEMATICS EDUCATION IN THE CONTEXT OF STEAM EDUCATION

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**Abstract.** *The pre-school period is valuable in itself. It is at this age that the child's most important personality traits, his or her perception, thinking, communication, etc., develop. STEAM goes hand in hand with the development of 21st century skills and should be included as early as possible in the curriculum. Children's early experiences with science, technology, engineering and mathematics and the arts influence their future success in these areas. When teachers give children early opportunities to learn maths and science in an interactive environment that builds communication and collaboration skills, children are more confident and competent in these subjects. This not only makes higher education more accessible to children but also contributes to a well-prepared society. Survey of 116 teachers and 104 parents identified that parents of pre-school children are more accurate in identifying the disciplines that STEAM education integrates, they perceive that the teacher's background in mathematics and science influences children's mathematical and science education, and that young children can apply early mathematical concepts. Parents identified advantages and barriers to the successful implementation of STEAM in pre-school education.*

**Keywords:** *child, mathematical skills, parent, pre-school age, STEAM, teacher.*

## Introduction

The Ministry of Education, Science and Sport of the Republic of Lithuania in its Plan for Improving Mathematics Teaching and Learning 2023-2027 (Lietuvos Respublikos švietimo, mokslo ir sporto ministerija, 2023) states that mathematics achievement of pupils in grades 4 and 8 remains insufficiently high, the results of the mathematics national mathematics matriculation exams have been declining year by year, and the performance of Lithuanian pupils in the period 2006-2018 has remained stable - close to, but not reaching the OECD countries average (Lietuvos Respublikos švietimo, mokslo ir sporto ministerija, 2023). This document also points out that only few children in Lithuania reach the highest levels of achievement in mathematical and scientific literacy. This shows that children have only the most basic skills - reconstructing knowledge, explaining simple phenomena, drawing direct conclusions - while their skills in analysing, interpreting and evaluating information in mathematics and science are



significantly weaker than OECD countries. All this suggests that too little attention is paid to individualised mathematics education, which would not only provide basic knowledge but also facilitate the achievement of higher skills. Hassan et al. (2019) argue that mathematics for three- to six-year-olds is vital for the future foundation of mathematics learning. It is essential to introduce mathematics education to children from the age of three. It helps them understand real situations and build a successful - solid foundation - in primary schools. Aubrey (2006), in a study on early mathematics education and their impact on later achievement, also argues that it is important to develop the mathematical skills of pre-school children (3-5 years). The results of the study show that children with low mathematical knowledge at the beginning of their formal education perform poorly in primary school. It is likely that performance will not improve in the future. The aim of the study is to investigate the attitudes of parents and teachers towards mathematics education in the context of STEAM education. The object of the study is the development of mathematical skills in pre-school children using STEAM education. The methods of the research are analysis of scientific literature, survey of teachers and parents (quantitative research).

### **Advantages of STEAM education in pre-school education**

Quality pre-school and pre-primary education must contribute to sustainable development and STEAM development, as must the entire national education system. In Lithuania, as in the rest of the world, these areas of innovative pedagogical practices are receiving considerable attention. Analysis of foreign experiences has shown that many foreign countries have national strategies for the development of sustainable development and STEAM from pre-school to higher education and are developing specific models and practices to implement these strategies (Monkeviciene et al., 2018).

Smith, Samarakoon (2017), Heinecke (2019), who have studied the positive impact of STEAM on children's education, argue that STEAM makes the education process much more enjoyable for children. Children are more enthusiastic and make meaningful connections to STEAM activities. They report that STEAM comes from a place of mad curiosity, enthusiasm and opportunity. STEAM encourages them to try and look at failure in a different way - to see its benefits.

According to Chatzopoulos et al. (2019), in STEM interactions, children are encouraged to express ideas creatively, are motivated by curiosity in activities, are encouraged to think outside the box, are encouraged to work in teams and to develop a sense of community and are taught to learn from and with others. Children are taught new skills such as technological literacy, they are trained to be competent problem-solvers, innovative, conscious and intelligent thinkers. The

integration of STEAM helps to strengthen children's engagement in the educational process (Ng, Kewalramani, Kidman, 2022).

An integrated approach to STEAM fosters the development of human thinking, enabling complex knowledge and understanding of the world, responsible decision-making and future pathways. There is unanimous agreement that integrated action brings benefits to all stakeholders (Slekienė, 2018).

According to literature, the main advantages of STEAM education are related with children's motivation, making process more enjoyable, developing creativity and higher order thinking, sense of community.

### **Barriers of STEAM education in pre-school education**

Mervis (2011) identifies underqualified teachers as one of the barriers. Asghar et al. (2012) also suggest that internal barriers to interdisciplinary STEM education include issues related to teachers' beliefs, abilities, knowledge and skills. Research shows that young children can acquire and practice early mathematical concepts, but many teachers have not received adequate mathematical training themselves and are not well equipped to understand children's development of mathematical concepts (Stone - MacDonald et al., 2011). Tucker (2012, cited in Chatzopoulos et al., 2019) and Ejiwale (2013) argue that the problem with STEM implementation is the education system as a whole, and that new education programmes such as STEM education will not deliver the desired results.

Ejiwale (2013), Chiu et al. (2015), Howard - Brown, Martinez (2012) point to several other barriers to STEM implementation. According to Ejiwale (2013), these include: lack of investment in teachers' professional development; lack of connection with learners; poor content preparation, delivery and assessment methods; poor laboratory facilities and teaching aids; and lack of hands-on teaching of children. According to Chiu et al. (2015), another barrier faced in STEM implementation is that of teacher collaboration. Collaboration can help teachers to understand children's preconceptions or misconceptions and make decisions about adapting instruction. The authors also emphasize that life in the 'real world' is not related to a specific topic. Teacher collaboration is a step towards the integration of disciplines, better reflecting what actually happens outside the classroom.

Monkeviciene et al. (2018) point out that not all areas of STEAM are given equal attention in pre-school institutions, and that the development and implementation of innovations is fragmented. According to the authors, technological and natural science research tools and activities are the most commonly used in pre-school educational institutions, while mathematical and engineering research tools and activities are used much less frequently.

Summing up, the main barriers are related to teachers' qualification, background, motivation, collaboration and beliefs.

### **Mathematics education in pre-school institutions in a STEAM education context**

According to Burskaitiene (2019), mathematics in STEAM education is mathematical understanding or mathematical skills that gradually evolve from basic sorting and classification skills to logical, rational understanding of the world. Children enter pre-school from different economic and social backgrounds. They enter education with significant differences in their knowledge of mathematics and science, and these differences persist or even increase over time. However, the authors point out that gaps in mathematics and science knowledge can be narrowed by introducing STEAM in pre-school education (Hassan et al., 2019). Kermani and Aldemir (2015) conducted a study on preparing children for success: 'Integrating science, mathematics and technology in pre-school education'. The findings indicate that deliberate learning of mathematics and science, supported by technology and its integration into the pre-school curriculum, significantly improved mathematics and science outcomes for children from socio-economically disadvantaged backgrounds. STEAM promotes learning across content areas such as mathematics, science and technology (Ng et al., 2022). Hassan et al. (2019) argue that this integration allows children to learn science and mathematics concepts in STEAM education by applying technology and engineering in a tangible, realistic and meaningful way. This approach allows children to explore mathematics and science in a more personalised context while helping to develop critical thinking skills (Kennedy, Odell, 2014). Hassan et al. (2019) also suggest that children's early experiences with science, technology, engineering and mathematics influence success in these areas in the future. High-quality STEM experiences can provide children with engagement, confidence, curiosity, and understanding of integrated STEM disciplines. In STEAM, children learn content by doing, using mathematical logic. They go beyond one subject but develop skills that transcend boundaries through a wide range of skills. Ongoing mistakes and failures are a necessary, integral process, as it allows children to reflect and continuously make corrections, attempts, failures, revisions and explorations until success. In this way, children develop patience, tolerance for disappointment and learn to be responsible for themselves (Chen et al., 2021). Laboy-Rush (2011) points out that there are many ways in which an educational institution or classroom can improve the teaching of mathematics and science, but all too often teachers address these topics in isolation from other subjects. When teachers give children early opportunities to learn mathematics and science in an interactive environment that builds communication and collaboration skills, children are more confident and

competent in these subjects. This not only makes higher education more accessible to children but also contributes to a well-prepared society.

### **Research methodology**

*Survey organisation.* The survey was conducted in October 2023. The general population was composed of teachers living in Lithuania and parents who take their children to pre-school education institutions. The data was collected through various social networking groups, considering the activity of parents, so the results may not reflect the views of all parents. The findings of the study were only applicable within the defined sample.

*Study sample.* Taking into account the problem, aim and objectives of the study, convenience sampling was used to select the group and sample. In order to investigate the features of mathematical education in the context of STEAM education from the point of view of teachers and parents, the sample consisted of teachers from pre-school institutions and parents of pre-school children attending pre-school education institutions. The survey received 116 questionnaires from teachers and 104 from parents, for a total of 220 respondents, the number of respondents chosen to obtain more accurate survey results.

*Analysis of survey data.* The quantitative data obtained from the questionnaire statements were processed using statistical methods such as MS Excel, which is used for graphical representation, grouping and comparison of data in figures, tables and summaries, and the chi-square statistic for comparison.

### **Research results**

Teaching pre-school child's mathematical skills through STEAM education has a positive impact on their development, achievement and academic success. The study started with the aim of finding out whether parents and teachers understand what the basis of a pre-school child's personal development is.

When comparing the data provided by parents and teachers, a statistically significant difference was found (chi-square  $p=0.005<0.05$ ), indicating that parents and teachers have different views on the basis of the child's personal development. In summary, it can be stated that teachers lack knowledge about the basis of development of pre-school children, as only 75.9% of teachers answered that the basis of pre-school children's development is both adults and the child's relationship with the environment. In this respect, it can be noted that parents of pre-school children have a deeper knowledge of this issue, as 91.3% indicated that adults and the child's relationship with the environment are the basis for the child's development.

The study sought to find out the parents' and teachers' views on the principles that STEAM activities in kindergarten should follow (Table 1). This gives an overview of teachers' and parents' understanding of STEAM activities.

*Table 1 Results on principles that STEAM activities in kindergarten must comply with (compiled by authors)*

Principles	Percentage		Chi-square p
	Parents	Teachers	
Interdisciplinary teaching and education	49%	37,1%	0,08>0,05
Contextualisation	33,3%	18,1%	0,01<0,05
Interest/engagement	77,5%	66,4%	0,07>0,05
The process, not the outcome, is what matters	48%	64,7%	0,01<0,05
Don't know	8,8%	2,6%	0,05=0,05

Statistically significant differences were found when comparing the opinions of parents/guardians and teachers on the principles that STEAM activities in kindergarten should follow,  $p = 0.01 < 0.05$ , indicating a disagreement between parents/guardians and teachers on the importance of process rather than outcome and contextualisation in educational activities.

It was also sought to find out the views of parents/guardians and teachers on the benefits of STEAM in pre-school (Table 2).

*Table 2 Advantages of STEAM in pre-school education (compiled by authors)*

Statements	Parents' answers			Teachers' answers			Chi-square p
	Agree	Partially agree	Disagree	Agree	Partially agree	Disagree	
Making the education process more enjoyable	76,5%	22,5%	1%	87,2%	12,8%	0%	0,02<0,05
Children are more enthusiastic	76,5%	21,6%	2%	74,6%	25,4%	0%	0,10>0,05
Encourages children to see failure as success - to see its benefits	60%	35,3%	4,9%	61%	31,4%	7,6%	0,63>0,05
Motivates children to think at a high level	72,5%	24,5%	2,9%	64,4%	32,2%	3,4%	0,42>0,05
Encourages creative	83,3%	14,7%	2%	87,3%	11,9%	0,8%	0,62>0,05

expression of ideas							
Develops a sense of community	68%	30,1%	1,9%	82,2%	16,9%	0,8%	0,06>0,05
Develops new skills in children	85,3%	13,7%	1%	88,2%	11,8%	0%	0,4>0,05
Children learn to practise real problem-solving skills	71,6%	27,5%	1%	78,8%	20,3%	0,8%	0,45>0,05
Critical thinking is developed	66%	33%	1%	82,9%	24,6%	0,9%	0,01<0,05
Increases interest in science	66,7%	28,4%	4,9%	73,7%	24,6%	1,7%	0,29>0,05
Engineering, design and mathematical thinking are developed	73,1%	26,9%	0%	84,6%	13,7%	1,7%	0,02<0,05
Promotes the development of higher level thinking skills	70,6%	29,4%	0%	70,9%	29,1%	0%	0,99>0,05
Developing a complex understanding of the world	76,5%	21,6%	2%	76,1%	22,2%	1,7%	0,98>0,05

Statistically significant differences were found when comparing parents' and teachers' views on the benefits of STEAM in pre-school education.  $p= 0.02 < 0.05$ , indicating a discrepancy between parents' and teachers' views on STEAM making the education process more enjoyable.  $p= 0.01 < 0.05$ , indicating a disagreement between parents and teachers on the fact that STEAM activities develop critical thinking.  $p= 0.02 < 0.05$ , indicating a disagreement between parents and teachers on the fact that STEAM activities develop engineering, design and mathematical reasoning. 26.9% of parents/guardians and 13.7% of teachers agree that STEAM helps to develop these skills.

Parents and teachers were asked for their views on barriers to successful STEAM implementation (Table 3).

Table 3. Barriers to the successful implementation of STEAM in pre-school education (compiled by authors)

Statements	Parents' answers			Teachers' answers			Chi-square p
	Agree	Partially agree	Disagree	Agree	Partially agree	Disagree	
Teacher qualifications	71,8%	24,3%	3,9%	52,5%	33,1%	14,4%	0<0,05
Teachers' beliefs, attitudes	83,5%	15,5%	1%	63,6%	28,6%	7,4%	0,01<0,05
Teachers' mathematics and science backgrounds	73,3%	22,9%	3,8%	50,8%	36,4%	12,7%	0<0,05
Teacher motivation	96,1%	2,9%	1%	83,1%	11,9%	5,1%	0<0,05
Preparation time	68,6%	28,4%	2,9%	63,9%	31,1%	5%	0,63>0,05
Lack of connection with learners	71,6%	26,5%	2%	51,2%	38,8%	9,9%	0<0,05
Preparation, presentation and evaluation of content	80,4%	16,7%	2,9%	68,9%	26,9%	4,2%	0,12>0,05
Laboratory facilities and equipment	47,1%	43,3%	9,6%	60,5%	31,9%	7,6%	0,13>0,05
Practical teaching of children	77,1%	19,4%	2,9%	61,9%	32,2%	5,9%	0,04<0,05
Cooperation between teachers	66,7%	30,4%	2,9%	56,8%	41,5%	4,2%	0,32>0,05
Unequal focus on STEAM activities	51,5%	43,7%	4,9%	44,9%	45,8%	9,3%	0,36>0,05

Statistically significant differences were found when comparing the perceptions of parents and teachers on the barriers to the use of STEAM in pre-school education. Parents and teachers disagree on the following barriers to STEAM implementation: teachers' lack of qualifications ( $p=0 <0.05$ ), teachers' beliefs and attitudes ( $p=0 <0.05$ ), teachers' mathematics and science background ( $p=0 <0.05$ ), teachers' motivation ( $p=0 <0.05$ ), lack of connection with learners ( $p=0 <0.05$ ), and hands-on teaching of children ( $p= 0.0 <0.05$ ).

## Conclusions

The pre-school years are important and precious, influencing a child's future learning and life. At this age, children are curious about the world, experimenting, and rapidly developing their language and vocabulary. Literature has shown that STEAM enhances children's engagement in the educational process (Ng, Kewalramani, Kidman, 2022), children become more creative Chatzopoulos et al., (2019), and the learning process itself becomes more engaging Smith, Samarakoon (2017); Heinecke (2019). The results of the study revealed that both educators and parents have a positive attitude towards STEAM and see the benefits.

The most frequently observed aspects of the educational process are children's enjoyment, enthusiasm, creativity, and complex understanding of the world. The analysis revealed that educators were more positive about some aspects of STEAM: that STEAM makes the educational process more enjoyable, and that STEAM activities foster engineering, project-based and mathematical thinking, as well as critical thinking.

One of the most common barriers cited by the researchers was the lack of qualifications of educators and lack of mathematical and STEAM knowledge (Ejiwale, 2013, Mervis, 2011). Unmotivated, uncooperative educators do not create the right conditions for STEAM education (Chiu et al., 2015, Howard - Brown, Martinez, Times, 2012, Monkeviciene et al., 2018). Empirical research has revealed that the biggest barriers are the lack of motivation, attitude, training and qualifications of educators. Teachers are more critical of their situation than the parents who participated in the study.

The survey confirmed the findings of the literature analysis that in pre-school education the preparation and motivation of teachers have a significant impact on children's mathematical education, which determines the enjoyment of the educational process, children's enthusiasm for creativity, and the complex understanding of the world in future.

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# COMPETENCE OF LATVIAN PRESCHOOL TEACHERS TO INCLUDE NEWCOMERS IN EDUCATION

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**Abstract.** *The 21<sup>st</sup> century is the time of globalization, and migration has become the norm. As a result of these trends, the education systems must be inclusive in order to ensure the right of all children to education, regardless of their background. Preschool teachers play an essential role in the implementation of inclusive education. They have the opportunity and tools to form a foundation for further education by creating a positive and supportive environment where all children can feel welcome. In order to promote inclusion, preschool teachers must have certain competences for the inclusion of newcomers in education. The paper presents a structural model of preschool teacher competence for the inclusion of newcomers in education and the results of the preschool teacher questionnaire. The research results show that Latvian preschool teachers' competence to work with newcomer children is insufficient and needs to be improved.*

**Keywords:** *competence, inclusion newcomer, preschool teacher.*

## Introduction

The 21<sup>st</sup> century is a time of change, with globalization becoming increasingly important in today's world. Rapid technological developments enable people to be mobile in different areas of the world. This increases the opportunities for migration. Living in a changing world, people may choose or be forced to leave their home country due to social, political or economic circumstances (Alhallak, 2019). Russia's invasion of Ukraine in February 2022 led to a sharp increase in the number of asylum seekers in Latvia. According to the Office of Citizenship and Migration Affairs (PMLP, 2021), 148 asylum seekers were registered in Latvia in August 2021. By August 2022, this number had increased to 22,119, which is 1,310 % more than a year earlier (CSB, 2022).

The research topicality is determined by the rapid increase in the number of newcomers in Latvian educational institutions. 4.7 million Ukrainian refugees have registered for temporary protection or similar assistance schemes in the EU. 41,812 of these refugees reside in Latvia. A total of 170 asylum seekers and 195,354 stateless persons are registered (UNHCR, 2022). There are 4,405

Ukrainian war refugee children registered in Latvian educational institutions (1,329 attending preschool education institutions, 3,076 attending Forms 1 to 12) (CSB, 2022). The large number of newly arriving refugee families poses challenges to the capacity of host countries' educational institutions (Busch, Buchmüller, & Leyendecker, 2023). The challenges need to be addressed as education is one of the main ways to help newcomers integrate into the host country (Grosa, 2022). Preschool education is particularly important in helping children develop their cognitive and social skills.

The inclusion of newcomer children in the educational system is based on meeting their emotional, social and learning needs (Jalušič & Bajt, 2022). A teacher is one of the supportive mechanisms for the social adaptation of newcomers to the new learning environment, being a support for safety to mitigate the effects of the past (Soylu, Kaysili, & Sever, 2020). However, teachers lack the training and resources to fully integrate newcomers into the host country (Stevens, Siraj, & Kong, 2023). Several studies have been conducted on how to ensure the inclusion of newcomers in a preschool education institution and how preschool teachers can engage with parents of newcomers (Tobin, 2020; Sønsthagen, 2020; Anderstaf, Lecusay, & Nilsson, 2021).

Teachers' readiness to integrate newcomers into education is determined by the set of existing competences that teachers have to successfully integrate newcomers into the educational process (Bilgili, 2019). Well-trained and competent teachers are essential to ensure children's well-being, learning and development by providing high-quality curricula that are relevant to their interests and needs (Manning et al., 2017).

The aim of the paper is to analyze the competence (knowledge, skills and attitude) of Latvian preschool teachers to work with newcomers. The analysis is based on the identified structure of preschool teachers' competence to include newcomers in education.

Methods: literature analysis, questionnaire survey, data analysis in SPSS.

## **Theoretical Framework**

Working with newcomers is a complex process that requires intercultural competence, teacher's individuality and foreign language competence. Intercultural competence is the ability to create an environment where people from different cultures can feel safe and respected. It includes knowledge of different cultures, empathy and respect for people from other cultures, and the ability to adapt to different cultures (Uibu & Tagamet, 2022).

The analysis of the literature identified aspects that influence the teacher's actions towards newcomers. The ecological theory of Uri Bronfenbrenner on the influence of the social environment on human development is an essential component of any analysis of the learning environment (Ettekal & Mahoney,

2017) and one of the techniques used to understand the complexity of the perspective of teacher competence to include newcomers in education and its impact on the individual (Chen, 2019). The microsystem involves the teacher's interaction with pupils, other teachers and the school administration. Teachers are the ones who interact the most with newcomers, so their attitude and behavior are essential for the inclusion of newcomers in the educational process (Søe, Schad, & Psouni, 2023). The more teachers believe they can implement inclusive practices, the more positive is their attitude towards inclusion (Megalonidou & Vitoulis, 2022). The mesosystem includes collaboration with colleagues and the institution's administration. The exosystem is a broader system that includes the teacher's interaction at the community level with parents and organizations. The macrosystem combines social, cultural and political aspects, but the chronosystem is the environmental changes over time (Chen, 2019).

Teachers who are able to understand and recognize children's emotions can respond better to their needs and provide a supportive learning environment (Pan et al., 2023). Moreover, teachers' emotions involve dynamic interactions between personal, professional and social environments. In order to describe preschool teachers' attitude towards newcomers, three factors of the preschool teachers' cultural value scale are used: acceptance of cultural differences, adaptation of cultural differences and rejection of cultural differences (Yılmaz & Ömeroğlu, 2023).

The age and level of education of newcomers affect their integration into the educational process. A teacher who is familiar with the psychological characteristics of preschool children and is tolerant to the different (Lamb, 2019) can provide newcomers with the support and security (Bouchane et al., 2018) needed to overcome migration trauma (social isolation, depression, somatic problems, anxiety) and adapt to a new cultural context (Grosa, 2022). Although parents and preschool teachers strive for the same goal, their differences in values can make collaboration difficult (Toren, 2021).

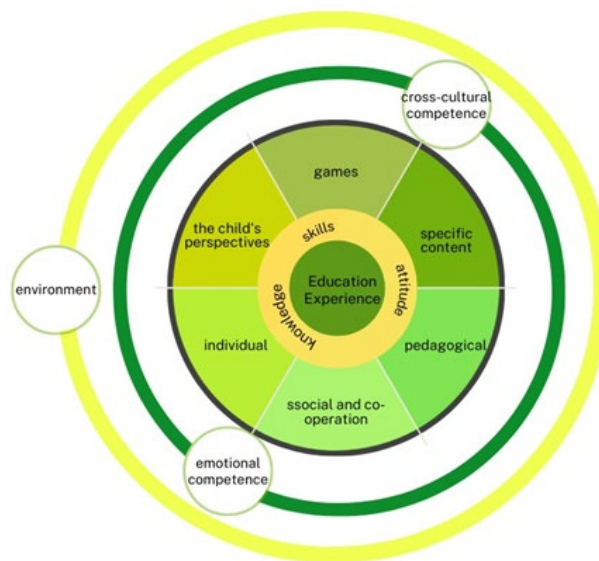
The environmental aspect is important for the implementation of the pedagogical process with newcomers: a teacher encourages newcomers in the new environment in order to reduce the newcomers' confusion and tension, arising from their different previous social, cultural and linguistic experiences (Picchio & Mayer, 2019). Teacher's empathy is a way of showing support and care to newcomers, and this may help them feel accepted and safe (Lamb, 2019); they need to ensure warm and positive relationships with newcomers (Stevens, Siraj, & Kong, 2023). However, if staff in preschools is unprepared to deal with the challenges, posed by welcoming newcomers (Silva et al., 2020), they may find it difficult to show empathy. This problem combines a lack of cultural understanding and foreign language skills, which hinders communication between a teacher and a newcomer, as well as between a teacher and a newcomer's family (Lunneblad, 2017).

The quality of the child-teacher relationship is important for the social and emotional development of a child (Šumatić et al., 2023), so that teachers could build positive relationships with all their children, regardless of their cultural background. This requires intercultural competence, as communication is often impeded for cultural rather than linguistic reasons (Jiang, Liu, Guo, & Wang, 2022). It is important for teachers to be culturally competent so that they can recognize and correct communication problems that arise between different cultures. In order to ensure that teachers in Latvia meet the requirements of the new competency-based education, it is important to expand teachers' communication skills. This means that teachers need to learn foreign languages and become familiar with different cultures and social environments (IZM, 2017).

Oral text is the basis of communication for preschool children. By the age of 5, children have thousands of words in their vocabulary, which they use every day and have memorized, whether intentionally or unintentionally. Some children learn the basics of language effortlessly (Feldman, 2019), while others have problems (physical, mental) understanding oral text (Ketelaar et al., 2022). Consequently, teachers need to have sufficient knowledge of the newcomer's language to be able to communicate with them in a constructive way. Research conducted in 2016 (Gelişli & Yazici, 2016) found that pre-service preschool teachers have difficulties communicating in a foreign language. One of the techniques to prevent conversational problems in the preschool stage and to promote communication is the drawing technique (Efe et al., 2023). The communication process and the daily routine of preschool children require a high level of emotional competence from teachers (Sutton & Wheatley, 2003). Teachers' emotions are not only internal; they are also influenced by the environment in which they work (Chen, 2019). Teachers' emotional competence determines their mental health and the teacher-child relationships (Schelhorn et al., 2023; Wang & Burić, 2023; Frenzel et al., 2018), as well as contributes to preschoolers' emotional capacity (Agbaria, 2021). Emotionally competent teachers can better understand pupils' needs, manage their own and others' emotions, work as a team and make decisions (Im, Peng, & Hutagalung, 2023). Preschool teachers highly value their emotional intelligence (Im, Hutagalung, & Peng, 2021) as it determines the quality of teaching and learning for children (Cheng et al., 2022). Teachers with less experience and younger teachers have higher emotional intelligence than older and more experienced teachers (Milojević, 2022). Motivation plays a key role in the emotional self-regulation of the pre-service teachers (Sukowati et al., 2020) and is related to emotional competence, which determines the teacher-child relationships (Schelhorn et al., 2023; Wang & Burić, 2023; Frenzel, et al., 2018) and the quality of teaching and learning for children (Cheng et al., 2022).

In order to provide quality education to newcomers, specific competences are also needed, which are based on teachers' skills and attitude, professional and general knowledge to promote inclusive education. Teachers' personal experience can equip them with valuable information that helps them to develop their own knowledge and beliefs, in turn contributing to their empowerment. Having a positive attitude towards newcomers is the most important aspect of the teacher's competence in working with them (Megalonidou & Vitoulis, 2022). The first years of a child's life are crucial for his/her social, emotional and cognitive development. Teachers play an important role in this development. Research (Hsien, Brown, & Bortoli, 2009) has found that there is a correlation between teachers' attitude and their educational qualifications: the higher the educational qualification, the more positive is the attitude towards newcomers. Both academic and pedagogical skills and personal qualities are essential for the successful inclusion of newcomers (IAC, 2021).

Experience and education are the core competences (foundation, base) from which knowledge, skills and attitude are built (Figure 1).



*Figure 1 Structural model of the preschool teachers' competences for the inclusion of newcomers in education (by the author, 2023)*

Teachers' pedagogical knowledge consists of declarative and procedural knowledge (Mathers, 2021), as well as specific knowledge, covering expertise about a child (Carter & Darling-Hammond, 2016). This knowledge includes demographic information (age, ethnic identity, religion) about a child (Patel et al., 2023). Teachers' knowledge and beliefs depend on previous professional and personal experience in relation to the present and future (Schwartz et al., 2022). Teachers' beliefs influence their actions and shape their behavior (Biesta, Priestley, & Robinson, 2015). Teachers' personal experience can provide them with valuable information that helps them make better decisions and solve

problems (Leijen, Pedaste, & Lepp, 2020). Overall, it can be concluded that teachers' knowledge and beliefs are factors determining their actions and behavior, which in turn are manifestations of human attitude (Ajzen et al., 2018).

Skills and knowledge are closely related to the teacher's work environment and are thus more subject-specific or age-group specific (Mulder, 2014). On this basis, a meta-competence emerges, which is a complex construct comprising several competences: pedagogical competence - the organization and management of the daily educational process; specific content competence - the field of training; individual competence - personal skills and individual psychological characteristics; play competence (Stevens, Siraj, & Kong, 2023) - encouragement and assessment of children in the process of playing activity; competence of a child perspective - teachers' understanding and knowledge of children's learning and development; collaboration and social competence - teachers' collaboration with different social groups (colleagues, administration, parents, children) (Lillvist et al., 2014). These competences constantly interact.

Emotional competence and intercultural competence are pervasive competences that continuously contribute to the full and positive functioning of the competence required by a preschool teacher for the inclusion of newcomers. In turn, different aspects of the environment, such as cultural norms, social expectations and political pressures, may have a significant impact on how, why and when teachers develop, manage and express their emotions (Chen, 2019) and apply their intercultural competence. Intercultural competence is important in language learning because it is closely related to communicative competence (Jiang, Liu, Guo, & Wang, 2022).

## **Research Methodology**

Based on the theoretical findings and the results of the discussion, a questionnaire for teachers' self-assessment on the inclusion of newcomers in education was developed according to the situation in Latvia. The Teacher Intercultural Competence Questionnaire (TICQ) (Timoštšuk, Uibu, Vanahan, 2022) was used as a basis for assessing teachers' intercultural competence (covering attitude, knowledge and skills). It consists of 20 questions: 10 questions on skills, 5 questions addressing the attitude and 5 questions related to knowledge. The questions were adapted for Latvian preschool teachers. The questionnaire was supplemented with questions on what influences and contributes to teachers' competence to work with newcomers. Based on the theoretical analysis and the results of the discussion, the questionnaire was structured in 5 blocks: 1) 5 questions describing the respondents; 2) 16 statements describing knowledge, skills and attitude - closed questions; 3) cooperation with colleagues (institution staff) - semi-open questions; 4) foreign language activities - listening, reading, speaking - semi-open questions; 5) increasing teachers' motivation to include



newcomers - semi-open questions. According to the aim of the paper, only the second block of the questions is analyzed.

The survey was conducted in the e-environment (Google Forms) from 01.02.2023 to 01.04.2023. 152 Latvian preschool teachers participated in the survey. Data were coded and analyzed in SPSS. Cronbach's alpha was applied to test the internal consistency of the survey;  $\alpha=.908$  indicates very good reliability and internal consistency of characteristics.

## Results

The survey results show that there is a correlation between attitude and skills; a correlation between skills and knowledge and knowledge and attitude is not strong (Table 1).

*Table 1 Correlations between the respondents' knowledge, skills and attitude to working with newcomers (by the author, 2023)*

	Skills	Attitude
Attitude	.311	
Knowledge	.276	.216

The results support the theoretical insight that attitude, knowledge and skills influence each other (Hu, Fan, Yang, & Neitzel, 2017) and teacher attitude is a mediator between knowledge and practice (Hu, Fan, Yang, & Neitzel, 2017).

The self-assessment of knowledge, skills and attitude can be influenced by the respondents' experience and level of education. Statistically significant differences were found in the ratings of attitude ( $p=.027$ ) depending on the teacher's work experience: the respondents with more than 40 years of experience (Mean Rank 107.44) and the respondents with 21-30 years of experience (Mean Rank 85.23) have higher self-assessed attitude; these teachers have worked longer in the profession and gained experience and knowledge that help them to maintain positive attitude. The respondents with 11-20 years of experience have the lowest self-assessed attitude (Mean Rank 56.52); they may have faced challenges related to work experience that could affect the attitude. Statistically significant differences were found according to the respondents' level of education in the self-assessment of skills ( $p=.043$ ): the highest self-assessment is for the respondents with a 1<sup>st</sup> level higher education (Mean Rank 93.36), the lowest self-assessment is for the respondents with a Master's degree (Mean Rank 66.80).

The statements describing skills, attitude and knowledge were analyzed. Table 2 shows the mean ratings for the statements concerning skills.

**Table 2 Self-assessment of the statements describing skills for inclusion of newcomers**  
(by the author, 2023)

Statement	Mean
I integrate the cultural values and lifestyles of newcomers into my lessons.	2.816
I build supportive relationships with the parents of newcomers.	3.322
I include examples of newcomers' experience in my play-based activities.	2.803
I organize events to increase children's knowledge of other cultures.	2.901
When planning the educational activities, I take into account the customs of newcomers.	2.763
I consult with other teachers or the administration to better understand the issues related to teaching newcomers.	3.230
I check the educational materials I use in the teaching process to ensure that cultural and ethnic biases are excluded.	3.191
I make changes to the learning environment so that all children have an equal opportunity to succeed.	3.355

The results show that teachers in Latvia are quite open to incorporating newcomers' cultural values and lifestyles into their lessons. Statistically significant differences ( $p=.036$ ) can be observed between teachers' level of education and the frequency with which teachers incorporate newcomers' cultural values and lifestyles into their lessons. Higher self-assessment is found among the respondents with a 1<sup>st</sup> level higher education, but lower among teachers who are completing a higher education qualification at the time of the survey. Students who complete their education and work in a preschool at the same time lack knowledge and experience in creating a multicultural environment. For example, teachers with higher education have slightly more indicated that they integrate the cultural values and lifestyles of newcomers into their lessons (47.4% vs. 42.8% with lower education) or make changes in the educational environment so that all children have an equal opportunity to succeed (48.7% vs. 42.8% with lower education). These differences could be related to the fact that teachers with higher education are more aware of cultural diversity and its importance in education (Hu, Fan, Yang, & Neitzel, 2017).

One out of three teachers (32.9%) do not take into account newcomers' customs when planning the educational activities, and (32.9%) do not include examples of newcomers' experiences in their play-based activities. Consequently, teachers (30.2%) do not integrate the cultural values and lifestyles of newcomers into their lessons. To ensure that all children, regardless of their background, have an equal opportunity to succeed, teachers carry out a variety of actions: 91.5% make changes to the learning environment so that all children have an equal opportunity to succeed; 88.1% build supportive relationships with the parents of newcomers; 85.6% consult with other teachers or the administration to better understand the issues related to teaching newcomers. This is a good indicator

because teachers learn better and gain experience from teachers in their community (Sumane & Aboltina, 2023). Teachers are responsible for providing quality education for all children, including newcomers (Norozi, 2022). To do this, 82.9% of teachers check the educational materials to exclude cultural and ethnic biases. To promote the full exclusion of cultural and ethnic bias in the educational materials, it would be necessary to educate teachers about cultural diversity and its importance in education (Mahmood, 2013), to develop and disseminate inclusive teaching materials (Laxton et al., 2021), and to conduct research on the impact of cultural and ethnic bias on learning (Glock, Kovacs, & Pit-ten Cate, 2018).

There were statistically very significant differences depending on the respondents' work experience ( $p=.006$ ): the respondents with 1-5 years of work experience (Mean Rank 92.56) are the ones most likely to make changes to the learning environment so that all children have an equal opportunity to succeed. Younger teachers are probably more exposed to new ideas and trends in education (Zafarullah al., 2022). They are also more motivated to prove themselves and succeed in their work. Teachers with 11-20 years of experience are the ones least likely to make changes to their learning environment (Mean Rank 64.27). Experienced teachers may be more attached to traditional teaching methods and approaches (Deng, 2023). They may also be more concerned about how change may affect their workload and career (Hogg, Elvira, & Yates, 2023).

The results on the teachers' attitude are summarized in Table 3.

*Table 3 Self-assessment of the statements describing attitude towards the inclusion of newcomers (by the author, 2023)*

Statement	Mean
Newcomers enrich the environment of my institution.	2.974
Newcomers enrich learning.	2.921
Newcomers enrich Latvian culture.	2.559
I think my institution could be more multicultural.	2.579

The ratings of the statement *Newcomers enrich the environment of my institution* showed statistically significant differences ( $p=.036$ ) according to experience: the respondents with 11-20 years of teaching experience were less likely to agree with the statement. We assume that this is the time when a teacher is most critical of what is happening.

Greek teachers believe that the inclusion of newcomers in the education system is beneficial for both children and society (Megalonidou & Vitoulis, 2022). In contrast, many Latvian teachers have less favorable attitude towards newcomers, for example, the respondents strongly disagree or tend to disagree that newcomers enrich Latvian culture (76%) or enrich learning (40%). The attitude is related to teachers' lack of knowledge and confidence in working with

newcomer children with different types of learning needs, and this affects the quality of teaching and learning (Kurniawati et al., 2017; Špona, 2019). Teachers' attitude towards diversity is an important factor for the successful inclusion of newcomer children (Prudnikova et al., 2023), and their knowledge of the dimensions of cultural diversity is important for newcomer children from different cultural backgrounds. In turn, children's cultural experiences and the implementation of learning in relation to their experiences provide an opportunity to organize a more meaningful educational process (Gay, 2000). As the attitude is the starting point for the development of intercultural competence (Deardorff, 2006), the low results obtained pose risks for the successful inclusion of newcomers: many teachers are not open to intercultural relations and diversity. The attitude may also be influenced by the Latvian experience: the effects of the Soviet era, when the national identity was restricted, are still felt. Although some research has found a correlation between teachers' attitude and their educational qualifications (the higher the educational qualification, the more positive the attitude towards newcomers) (Hsien, Brown, & Bortoli, 2009), this was not found in the present research.

Table 4 shows teachers' self-assessment of their knowledge for the inclusion of newcomers in education.

*Table 4 Self-assessment of the statements describing knowledge for inclusion of newcomers (by the author, 2023)*

Statement	Mean
I am knowledgeable in teaching strategies that incorporate components of ethnic identity diversity.	2.520
I have an understanding of the aspect of cultural diversity in pedagogy.	2.882
I am knowledgeable about how the experience of newcomers can affect their learning.	2.888
I am aware of various resources that can be used in the educational process of newcomers.	2.783

No statistically significant differences were found according to age and work experience.

Teachers need to be aware of potential problems and implement specific strategies, knowing the children's cultural background, to ensure both active learning for newcomer children and the adaptation of new cultural contexts to the educational process (Soylu, Kaysili, & Sever, 2020). Teachers need to be open to the new and, based on the experience and knowledge gained, improve their teaching practice through a variety of individual and group work activities (Prudnikova et al., 2023). In general, Latvian educational staff are interested in learning about diversity issues that include the diversity of ethnic identities. However, there is still a need for further education in this area, as the results of

the survey indicate insufficient knowledge and a need for further training. Attention should be paid to knowledge of teaching strategies that include a component of an ethnic identity diversity: 4.6% of the respondents indicated that they were not knowledgeable and 46.1% rather not knowledgeable in the use of such strategies. This fact is worrying because teachers' lack of knowledge limits the implementation of inclusive education (Kurniawati et al., 2017), affects the planning of the educational process and often fails to meet children's expectations (Santos & Miguel, 2019), and undermines a meaningful process based on constructivism in line with children's educational needs.

### **Conclusions**

1. Preschool teachers' readiness for the inclusion of newcomers in education is a meta-competence, and it includes several competences: pedagogical competence for the organization and management of the educational process; specific content competence, individual competence, playing competence, competence of a child perspective and social competence. These competences interact with each other and with transversal competences such as emotional competence and intercultural competence.
2. The results of the preschool teachers' self-assessment support the finding that attitude, knowledge and skills are interdependent and indicate that their quality is influenced by the respondents' experience and level of education.
3. The results show a contradiction: while the respondents stress that they are open to integrating newcomers' cultural values and lifestyles into the curriculum, one out of three respondents indicates that they do not include newcomers' customs and experiences into their play-based activities, which poses risks for the successful inclusion of newcomers in education.
4. The analysis of the preschool teachers' self-assessment of their knowledge and skills suggests a need for improvement.

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**SPECIĀLĀ PEDAGOĢIJA**  
*Special Pedagogy*

# IZGLĪTĪBAS PROBLĒMAS KRIMINĀLI TENDĒTO PERSONU RESOCIALIZĀCIJAS PROCESĀ

## *Educational Issues in the Resocialization Process of Criminal Offenders*

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**Abstract.** *The primary focus of the research is to investigate educational challenges in the process of resocializing individuals with criminal tendencies. The research aims to analyze educational issues in the resocialization process of offender to facilitate a more effective resocialization of criminally inclined individuals into society. The research tasks encompass various key objectives, including the analysis of offender characteristics, exploration of the formation process of offender personalities, formulation of proposals to mitigate the negative impact of macro-environmental factors, and development of resocialization recommendations. The novelty of the research is linked to changes in cultural values and social norms influencing the behavior, motivation, and transformation of social values among criminally inclined individuals. The outcomes of the research will contribute to the development of more effective strategies for crime prevention and the resocialization of offender personalities within society. The chosen research methods will provide a comprehensive insight into the formation of offender personalities and the factors influencing them. The monographic method will be utilized to describe existing research findings and provide conceptual explanations regarding offender personality and its formation mechanisms. The comparative method will be applied to assess issues related to the prevention of criminal activities among criminally inclined individuals in Latvia and other countries.*

**Keywords:** *criminality, education, imprisonment, integration into society, offenders, reintegration, resocialization.*

### **Ievads**

#### **Introduction**

Ņemot vērā, ka krimināli tendētas personas, kuras pārstāv plašāku individuālo spektru ne tikai kā oficiāli atzīti noziedznieki, bet arī tie, kuri nav iesaistīti tiesas procesos vai atrodas cietumā, sāk veidoties jau agrīnā vecumā, it īpaši pusaudžu gados. Šis periods ir kritiski svarīgs personības attīstībā (Nicolaescu, 2021). Tāpēc ļoti svarīga ir vide, kurā pusaudzis aug, jo tā ietekmēs viņa tālāko attīstību. Noziedzība, kas ir sarežģīta un negatīva parādība, ir plaši izplatīta mūsdienu sabiedrībā un ir kļuvusi par plaši izpētītu fenomenu

(Nicolaescu, 2021). Tomēr ir būtiski meklēt jaunus un efektīvākus veidus, kā novērst un apkarot dažādas noziedzīgas uzvedības formas, kā arī iespēju iesaistīt krimināli tendētas personības profilaktiskajās programmās izglītības procesa posmā.

Pētījuma galvenā ievirze ir izglītības problēmu izpēte krimināli tendēto personu resocializācijas procesā. Šis pētījums sniegs ieguldījumu kriminoloģijā, socioloģijā un psiholoģijā, palīdzot saprast, kā sociālie, kultūras, bioloģiskie un psiholoģiskie faktori ietekmē krimināli tendētas personas motivāciju un uzvedību. Cilvēka uzvedība veidojas kā bioloģisko, psiholoģisko, kultūras un sociālo procesu dinamiskas mijiedarbības rezultāts. Piemēram, (Ward et al., 2019) pētījums, analizējot krimināli tendētas personas uzvedību, iekļāva bioloģiskos, psiholoģiskos, sociālos un kultūras aspektus no dažādiem noziedzīgiem nodarījumiem. Šie aspekti ir svarīgi krimināli tendētu personu uzvedības izpētē un to prognozēšanā. Pētījuma mērķis ir analizēt izglītības problēmas, ar kurām saskaras krimināli tendētas personas resocializācijas procesā, veicinot efektīvāku to resocializāciju sabiedrībā. Tiks identificētas problēmas un ieviests sociālās resocializācijas process krimināli tendētām personām Latvijas sociālajā sistēmā, mainot noziedzīgo uzvedību, pārskatot morālās un juridiskās normas, ievērojot citu tiesības un pieņemot dzīvesveidu demokrātiskajā sabiedrībā. Pētījuma uzdevumi ietvers vairākas galvenās darbības, piemēram, sociālo patoloģiju tendenču identificēšanu, krimināli tendētas personības īpašību analīzi, kriminalitātes struktūras konteksta izpratni, krimināli tendētas personības veidošanās procesa.

## **Literatūras apskats**

### ***Review of literature***

Probācijas novērošanas laikā Valsts probācijas dienests uzrauga probācijas klienta uzvedību, iesaistot probācijas klientu viņa vecumam, psiholoģiskajām īpašībām un attīstības līmenim atbilstošos, kā arī atbalsta vajadzību un resursu novērtējumam atbilstošos sociālās uzvedības korekcijas un sociālās rehabilitācijas pasākumos. Tāpat tiek organizētas starpinstitūciju sadarbības sanāksmes, lai koordinētu probācijas klientam Valsts probācijas dienesta un citu institūciju kompetences ietvaros nodrošināmos pasākumus un mazinātu risku, ka probācijas klients izdara jaunu likumpārkāpumu. Sociālās uzvedības korekcijas definīcija ir noteikta Latvijas Republikas Valsts probācijas dienesta likumā kā sociāli atbalstāmas un tiesiskas uzvedības veicināšanas, veidošanas un attīstīšanas process. Latvijas Republikas Valsts probācijas dienesta likuma 11.<sup>2</sup> pants ietver pasākumus, kurus Valsts probācijas dienests veic, novērojot un pielāgojot probācijas klienta (krimināli tendēto personu) uzvedību atbilstoši viņa īpašībām un vajadzībām, lai mazinātu risku jauniem likumpārkāpumiem (Saeima, 2004).

Valsts probācijas dienests sniedz krimināli tendētai personai iespējas saskarties ar brīvprātīgajiem drošā vidē, cienot savu un citu cilvēku privātumu, apgūstot jaunas prasmes kopā ar zināšanām un sasniegumiem, piedāvājot jaunus izaicinājumus: mērķus, idejas un iedrošinājumu to īstenošanai; nodrošina fiziski un emocionāli drošu vidi; atbalsta neatkarību, veicinot savas izvēles un lēmumu pārvaldīšanu; kā arī piedāvā jēgpilnas un pilnvērtīgas brīvā laika nodarbes (Valsts probācijas dienests, 2020).

Pašlaik resocializācija krimināli tendētām personām ir pasākumu kopums, kas ietver sabiedrisko darbu, probācijas novērošanas izpildi, probācijas klientu uzraudzību un sociālās uzvedības korekcijas pasākumus (Saeima, 2004), kas izveidoti, lai novērstu atkārtotu noziedzīgu nodarījumu izdarīšanu un nodrošinātu to integrāciju sabiedrībā. Resocializācijas procesā iesaistītas ne tikai valsts iestādes, piemēram, Valsts policija un pašvaldības policija, bet arī tādas iestādes kā Bāriņtiesa, Valsts bērnu tiesību aizsardzības inspekcija un izglītības iestādes, kas veicina krimināli tendētas personas profesionālu sagatavotību, izglītību un veselības aprūpi (Saeima, 2004).

Lielākā daļa cilvēku pakļaujas sociālo faktoru ietekmei, kuros viņi funkcionē, piemēram, sabiedrības normām un likumiem. Cilvēka piederība noteiktai sociālai klasei, etniskajai grupai, dzimuma grupai, reliģijai, viņa politiskā pārliecība un materiālais stāvoklis, kā arī veselība ietekmē viņa uzvedību un uzskatus. Tomēr uzvedību un uzskatus ietekmē arī mikrovide, kurā cilvēks dzīvo, ieskaitot ģimeni, apkārtni, darbvietu un draugus (Neagu & Marc, 2019). Piemērotā mikrovidē cilvēks vairāk ievēros likumus, bet, ja mikrovide ir nelabvēlīga vai trūkst morālo vērtību, viņa uzvedība var būt amorāla vai prettiesiska, pat ar labiem materiālajiem resursiem (Neagu & Marc, 2019).

Resocializācija ir process, kas cenšas integrēt krimināli tendētas personas atpakaļ sabiedrībā pēc cietumsoda izciešanas. Resocializācija var būt īpaši grūta, ja persona atgriežas savā vecajā mikrovidē, kur turpinās negatīvās ietekmes un noziedzīgas darbības (Neagu & Marc, 2019). Šādos gadījumos resocializācija prasa izstāšanos no esošās vides un mēģinājumus veidot jaunu dzīvi ar jaunām ieradumiem, kas bieži prasa pārvarēt nopietnus materiālus un sociālus šķēršļus.

Resocializācija krimināli tendētām personām var būt negatīva, ja persona atgriežas pie iepriekšējām saskarsmes formām un ieradumiem, jo var pieņemt, ka, pārcietot cietumsodu, šī persona kļūst par “profesionālu krimināli tendētu personu”. No otras puses, resocializācija var būt pozitīva, ja cilvēks patstāvīgi atteicas no vecajiem ieradumiem, lai atgrieztos pie normālas ģimenes dzīves, iegūtu stabilu ienākumu, izglītību, nodarbotos ar sportu, atrastu mīļāko hobiju utt., darot visu nepieciešamo, lai vairs nekad neiekļautos noziedzīgajā dzīvesveidā (Neagu & Marc, 2019).

Resocializācija ir pasākumu komplekss krimināli tendētu personu sociālai reintegrācijai. Lai sasniegtu pozitīvu resocializāciju krimināli tendētām personām, ir nepieciešams ieviest dažādas metodes, programmas un

psihoterapeitiskas pieejas, kas tiek realizētas cietumos un medicīniskajās iestādēs (Neagu & Marc, 2019).

Resocializācija ir personības “jauns” sociālizācijas process, rehabilitācija un pielāgošanās sabiedrībā pēc sabiedrības normu, noteikumu un stereotipu pārkāpuma (Neagu & Marc, 2019). Resocializācijas laikā cilvēks atsakās no vienas dzīves formas par labu otrai, kas būtiski atšķiras no iepriekšējās; cilvēks tiek apmācīts un pārveidots tā, ka atsakās no iepriekšējās dzīves veida (Neagu & Marc, 2019).

Latvijas Republikas Krimināllikuma 38.<sup>1</sup> pants nosaka, ka probācijas uzraudzība kā pamatsods vai papildsods ir personas piespiedu iesaistīšana tās vecumam, psiholoģiskajām īpašībām un attīstības līmenim piemērotos sociālās uzvedības korekcijas un sociālās rehabilitācijas pasākumos (Saeima, 1999). Uz doto brīdi, 2023. gada decembrī, Latvijas Republikas valdība apstiprināja Tieslietu ministrijas sagatavotos Ministru kabineta noteikumus (Ministru kabinets, 2023), kas paredz Ieslodzījuma vietu pārvaldei (turpmāk – IeVP) īstenot projektu, turpinot attīstīt krimināli tendētu personu, kas izcieš sodu, resocializācijas procesu, lai nodrošinātu krimināli tendētu personu efektīvu atgriešanos un iekļaušanos sabiedrībā, īpaši nodarbinātības jomā. Šī projekta aktivitātes nodrošinās Resocializācijas politikas pamatnostādņu 2022.–2027. gadam īstenošanu (Ministru kabinets, 2022). Šīs Pamatnostādnes paredz dziļāku koncentrēšanos uz krimināli tendētu personu, kas atrodas ieslodzījumā un probācijas klientu tuvināšanu sabiedrībā notiekošajiem procesiem, resocializācijas darba elastības veicināšanu un darba metožu un pakalpojumu pielāgošanu šo personu un klientu individuālajām un dinamiskajām vajadzībām. Resocializācijas politikas attīstības posmā īpaša uzmanība tiek pievērsta darbam ar specifiskām mērķa grupām, piemēram, personām ar garīgās veselības problēmām, atkarībām, sievietēm, bērniem un jauniešiem, attīstībai, kriminālsodu izpildes (resocializācijas darba) efektivitātes pētījumiem, kā arī IeVP un Valsts Probācijas Dienesta (turpmāk - VPD) personāla profesionālās sagatavotības un noturības nozīmei un atbilstoši infrastruktūrai kā sekmīga resocializācijas procesa priekšnosacījumam (Ministru kabinets, 2022). Pamatnostādnes veidos visaptverošu personas integrācijas procesu sabiedrībā un darba tirgū (Ministru kabinets, 2022). Šīs resocializācijas politikas mērķis ir mazināt noziedzīgās uzvedības riskus krimināli tendētām personām, kas atrodas ieslodzījumā un probācijas klientiem, veicinot veiksmīgu iekļaušanos sabiedrībā pēc soda izpildes. Resocializācijas politika ietver aktīvu līdzdalību sabiedrības procesos, īpaši nodarbinātības jomā. Mērķis atbilst IeVP un VPD normatīvajiem aktiem noteiktajai kompetencei, bet netiks veidota palīdzība krimināli tendētām personām ģimenes locekļiem, kas regulēta citos normatīvajos aktos un institūciju kompetencē.

## **Pētījuma metodes un materiāli** ***Research methods and materials***

Pētījuma ietvaros tika izmantotas monogrāfiskā, analītiskā un dokumentu analīzes metodes, kā arī tiesību normu interpretācijas metodes (Mārtinsone & Pipere, 2021). Šīs metodes palīdzēs sniegt pietiekami plašu ieskatu par pētījuma tēmu un nodrošinās objektīvu un vērtīgu informācijas iegūvi, viena otru papildinot. Monogrāfiskā metode, kā norādīts (Mārtinsone & Pipere, 2021) grāmatā, tiks izmantota, lai aprakstītu pieejamos pētnieciskajos materiālos iegūtās atziņas un jēdzienu skaidrojumus par krimināli tendētām personībām un to veidošanās mehānismiem. (Mārtinsone & Pipere, 2021) grāmatā minētā komparatīvā jeb salīdzinošā metode tiks izmantota, lai salīdzinātu krimināli tendēto personu prettiesisko darbību novēršanas problemātiku Latvijā un citās valstīs. Salīdzinošā metode (Mārtinsone & Pipere, 2021) ļaus identificēt gan kopīgās, gan atšķirīgās iezīmes starp dažādām valstīm un pieejām, kā arī iegūt reālus statistikas datus un problēmu izvērtējumu, lai izstrādātu priekšlikumus krimināli tendēto personu kriminālsodāmu darbību prevencē. Kopumā šīs metodes sniegs vispusīgu ieskatu un izpratni par krimināli tendētas personības veidošanos un faktoriem, kas to ietekmē.

## **Pētījuma rezultāti** ***Research results***

Pasaules Veselības organizācijas (World Health Organization) tīmekļa vietnē tiek dots rehabilitācijas definīcijas – kas ir “pasākumu komplekss, kas vērsts uz cilvēka funkciju atjaunošanu un invaliditātes līmeņa samazināšanu cilvēkiem ar veselības traucējumiem, ņemot vērā viņu dzīves apstākļus” (World Health Organization, 2023). Citiem vārdiem sakot, rehabilitācija ir vērsta uz palīdzību bērniem, pieaugušajiem vai vecāka gadagājuma cilvēkiem būt pēc iespējas autonomākiem ikdienas dzīvē un dot viņiem iespēju iegūt izglītību, strādāt, atpūsties, kā arī veikt svarīgas sociālās funkcijas, piemēram, aprūpēt ģimeni. Šajā nolūkā tiek veikts darbs ar personu un viņas ģimeni, lai ārstētu pavadošās slimības un novērstu to simptomus, mainītu dzīves apstākļus, lai pilnībā apmierinātu viņu vajadzības, izmantojot asistējošās tehnoloģijas, mācītu pašpalīdzības prasmes un pielāgotu uzdevumus, lai tie būtu drošāk izpildīti bez ārējas palīdzības.

Dzīves posmā jebkuram cilvēkam var būt nepieciešami rehabilitācijas pakalpojumi traumas gadījumā, ķirurģiskas iejaukšanās, slimības vai citu veselības traucējumu, kā arī funkciju samazināšanās sakarā ar vecumu dēļ (World Health Organization, 2023).

Nākotnes pētījumos būs nepieciešams izvērtēt, vai ārstēšana un citi rehabilitācijas pasākumi var mazināt cietuma ietekmi uz kognitīvajām spējām un



samazināt noziedzīgu nodarījumu recidīva varbūtību. Ir arī nepieciešams noteikt jaunas metodes, kas varētu ietekmēt krimināli tendēto personu, kas izcieš sodu, antisociālās uzvedības maiņu. Piemēram, Lietuvas krimināllikums (Pocius, 2007) šo svarīgo sociālās rehabilitācijas procesa sastāvdaļu neiekļauj, bet iespējams, pēc šiem pētījumiem tādas valstis, kur šādi pasākumi nav paredzēti, pievērsīs tam uzmanību un iekļaus tos, lai turpmāk būtu iespējams ietekmēt šo krimināli tendēto personu antisociālo uzvedību. Šādi pasākumi noteikti jāietver izmaiņās izglītības sistēmā korekcijas iestādēs, kas nevar būt neveiksmīgas; šie pasākumi jāīsteno efektīvi un produktīvi.

Rehabilitācijas ietekmi uz “veselības” atgūšanas ātrumu, pakāpi un kvalitāti izpaužas arī noziedzības kontekstā. Tomēr dažādos pētījumos pastāv atšķirības, definējot “veselības atgūšanu”. Piemēram, rehabilitācija var būt vērsta uz riska faktoru (piemēram, atkarību no psihotropu vielām) samazināšanu, kas veicina noziedzīgu nodarījumu izdarīšanu. Dažos pētījumos noziegumu recidīva biežuma rādītājs tiek izmantots kā rehabilitācijas pazīme, veicot pasākumus, lai apkopotu noziedzības atkārtošanos, arestu un nosacītās brīvības atņemšanas pārkāpumu skaitu. Piemēram, noziedzības novēršanai kriminālā tiesu sistēma var piedāvāt uzvedības maiņas programmas, kas vērstas uz seksuālo noziegumu un vardarbības skaita samazināšanu, vai pašpalīdzības prasmju apmācības programmās profesionālajā un izglītības jomās (Forsberg & Thomas, 2022). Tāpat kā medicīnas iestādēs, daudzos pētījumos ir izpētīts, vai rehabilitācija palīdz atveseļošanās pēc noziedzīga nodarījuma vai samazina recidīvu biežumu (Surgenor, Diesfeld, Rychert, 2023).

Saskaņā ar 2014. gadā Somijā veiktu pētījumu (Tuominen et al., 2014), tika konstatēts, ka zema veiksmes līmenis lasīšanā, pareizrakstībā un matemātikā tiek uzskatīts par riska faktoru krimināli tendēto personu, kas atrodas ieslodzījumā, adaptācijas problēmām un noziedzīgai uzvedībai. Krimināli tendētām personām ir arī traucētas intelektuālās un izpildītājas funkcijas. Lasīšanas un pareizrakstības traucējumi, kombinēti ar sociāldemogrāfiskajām atšķirībām, padara grūtu šo traucējumu cēloņu interpretāciju krimināli tendēto personu vidū. Pētījums par krimināli tendētās personas, kas atrodas ieslodzījumā, izglītības līmeni norāda, ka šie traucējumi ir būtiska problēma attiecībā uz šīs personas rehabilitāciju, un ieteikts iekļaut izglītības programmas un fokusēties uz neirokognitīvajiem traucējumiem. Turklāt nepieciešama plašāka neuro psiholoģiska izpēte, lai nodrošinātu efektīvāku rehabilitāciju šādu personu vidū.

Krimināli tendēto personu resocializācija sabiedrībā ir viens no veidiem, kā veikt šo personu rehabilitāciju, kuri ir atbrīvoti no sodu izciešanas Dienvidāfrikas labošanas centrā. Pētījumā (Legodi & Dube, 2023) ir noteikts par lauku labošanas iestāžu pārpildījumu un ierobežotiem resursiem, kas radījuši darbiniekiem lielas grūtības darbā. Krimināli tendēto personu resocializācija ir kļuvusi par politisku problēmu korekcijas iestāžu jomā, jo pieaug šo krimināli tendēto personu skaits, kuri katru gadu tiek atbrīvoti no labošanas centrām. Pārpildīto labošanas centru

problēma ir globāla un negatīvi ietekmē darbinieku darba slodzi un rehabilitācijas programmas, ierobežojot krimināli tendēto personu pienācīgu resocializāciju sabiedrībā. Resocializācija ir būtiska, lai mazinātu recidīvu, un cietumu pārpildījums ar ierobežotiem resursiem ietekmē gan krimināli tendēto personu, gan darbinieku situāciju (Legodi & Dube, 2023). Labošanas centra pārpildījums negatīvi ietekmē gan krimināli tendētas personas, gan labošanas centra personālu un rada negatīvu ietekmi uz labošanas sistēmu Korektīvo iestāžu departamentā. Nepareiza pieeja rehabilitācijas prioritātēm var ietekmēt efektīvu rezultātu, tāpēc svarīgi ievērot uzņemšanas spējas ieteikumus.

Kosovā un Somijā tika veikti pētījumi, lai izpētītu cietuma vidi, krimināli tendēto personu uzvedību un cietuma vides uztveri, analizētu informētības līmeni, rehabilitāciju un programmas, kas tiek piemērotas abu valstu cietumiem. Šī pētījuma rezultāti iedrošināja attiecīgās iestādes pievērsties idejai ieviest jaunas rehabilitācijas un aprūpes programmas. Pētījumi parādīja, ka Kosovas krimināli tendētas personas ļoti negatīvi uztver apcietinājuma apstākļus. Savukārt Somijas krimināli tendētas personas pozitīvi vērtē apcietinājuma apstākļus, taču uzskata, ka ir nepieciešamas vairāk izglītības programmas. Pamatojoties uz to, tika secināts, ka Kosovas penitenciāras dienestam vajadzētu ieviest vairāk rehabilitācijas programmu. Un Somijas Kriminālsankciju aģentūrai būtu jāpastiprina savas pūles, lai īstenotu jaunas pēcaprūpes programmas un rīcības plānus (Azemi, 2020).

Protams, cietuma apstākļi nav vislabvēlīgākie, un lielākajai daļai valstu krimināli tendētas personas uztver cietuma apstākļus ļoti negatīvi. Krimināli tendētas personas ir neapmierinātas ar apcietinājuma apstākļiem, jo lielākajā daļā valstu cietumi ir ļoti pārpildīti, ilgstoša izolācija ietekmē uzvedību negatīvā veidā, un arī krimināli tendētas personas ir neapmierinātas ar cietuma uzturēšanos, jo uzskata sevi par nevainīgiem. Daži krimināli tendēti indivīdi nevēlas atgriezties atpakaļ cietumā. Daži krimināli tendēti indivīdi novērtē cietuma apstākļus pozitīvi, jo viņiem bija iespēja piedalīties atkarību rehabilitācijas kursā, kas ļoti palīdzēja viņiem turpmāk. Ilgstoša uzturēšanās cietumā arī veicina lielāku cietuma noteikumu pārkāpšanu. Krimināli tendēti indivīdi arī norāda, ka cietuma programmas, piemēram, rehabilitācija un izglītība, atstāj pozitīvu vai negatīvu ietekmi uz krimināli tendēto personu uztveri atkarībā no piedāvātajām programmām. Somijas cietumos krimināli tendēti indivīdi ir apmierināti ar uzturēšanos tajos, jo tās ļauj viņiem vairāk laika pārdomām un iespējām. Tomēr viņi izjūt brīvības ierobežojumus un žēlojas par pagātnes uzvedību, apzinoties, ka nodarījuši kaitējumu upuriem. Kopumā Somijas cietumos situāciju novērtē pozitīvi, bet Kosovas krimināli tendēti indivīdi atzīst nelabvēlīgu ietekmi.

Attiecībā uz rehabilitācijas programmām, krimināli tendēto personu viedokļi no Kosovas cietumiem atšķiras no krimināli tendēto personu viedokļiem no Somijas cietumiem. Kosovas cietumu krimināli tendētas personas, īpaši vīrieši, nožēlo savu pagātnes uzvedību, uzskatot cietumu par negatīvu vidi. Daži no

viņiem izjūt neapmierinātību ar tiesu procedūrām, uzskatot tās par netaisnīgām. Kopumā rezultāti liecina, ka ilgāks uzturēšanās cietumā saistās ar lielāku noziegumu un neapmierinātības līmeni. Krimināli tendētas personas uzskata cietuma vidi par sodīšanas vidi. Kosovas krimināli tendētas personas ir neapmierinātas ar cietuma pabalstu samazināšanu, brīvdienu ierobežojumiem un atbrīvošanas noteikumiem. Viņi uzskata, ka krimināli tendētām personām, kas atrodas ieslodzījumā, nepieciešamas vairāk programmu un kvalitatīvāka ārstēšana. Savukārt Somijas krimināli tendētas personas bija apmierinātas ar tiesas procesiem, uzskatot tos par godīgiem un taisnīgiem (Azemi, 2020).

Analizējot piedāvātās rehabilitācijas programmas šajā pētījumā, piemēram, grupas terapiju, psihoterapiju un konsultācijas, Kosovas krimināli tendētām personām netika piedāvāta neviena no šādām rehabilitācijas programmām. Savukārt Somijas krimināli tendētām personām tika piedāvātas šādas programmas. Šis pētījums ir kvalitatīvs, jo tam ir pamatā padziļinātas intervijas ar abu valstu krimināli tendētām personām, kas sniedz ieskatu abu valstu krimināli tendēto personu pieredzē un domās noteiktā laika posmā. Tāpēc, lai izstrādātu efektīvākas stratēģijas noziedzīgo nodarījumu novēršanai un krimināli tendētu personu resocializāciju sabiedrībā, nepieciešams veikt intervijas vai aptaujas ar krimināli tendētām personām un salīdzināt, kā mainās apstākļi cietumā, un analizēt un vērtēt krimināli tendēto personu apstākļus cietumā. Izglītības trūkums apgrūtina resocializāciju un bieži veicina recidīvus.

Izglītības trūkums apgrūtina resocializāciju un bieži veicina recidīvus. Krimināli tendēto personu izglītības un darba nozīmi atspoguļo daudzu Eiropas valstu, ieskaitot Poliju, tiesību akti un penitenciārā politika. Ieslodzījuma vietās izglītības mērķis ir palielināt iespējas veiksmīgai resocializācijai, uzlabot krimināli tendēto personu morālās vērtības un pašcieņu. Krimināli tendēto personu izglītība spēlē svarīgu lomu kā penitenciārais pasākums viņu resocializācijā un sagatavošanā sabiedrības dzīvei pēc atbrīvošanas (Becker Pestka, 2020).

Mūsdienās, kad notiek pastāvīgas tehnoloģiju pārmaiņas, krimināli tendēto personu resocializācija var būt sarežģīta bez pienācīgas izglītības un profesionālas sagatavošanas atgriešanai sabiedriskajā dzīvē. Bez izglītības un profesionālās kvalifikācijas, krimināli tendētas personas kļūst ļoti ievainojamas un pakļautas recidīviem. Izglītības mērķis ir palīdzēt krimināli tendētām personām attīstīties un izprast mācību nepieciešamību.

Kamēr krimināli tendētas personas atrodas ieslodzījumā, notiek nemitīgas pārmaiņas: mainās situācija zināšanu, jauno tehnoloģiju vai saziņas līdzekļu jomā. Atbilstoša izglītība palīdzēs krimināli tendētām personām sekot līdzi tehnoloģiskajam progresam un pastāvīgi mainīgajai realitātei.

Analizējot Polijas penitenciārā dienesta pētījumus un projektus par ieslodzījuma vietu izglītības programmu īstenošanu Eiropas valstīs, kas norāda uz

efektīviem risinājumiem, ko var adaptēt citās valstīs, autore cenšas apzināt labāko praksi un pielietot to Latvijas sodu kontekstā penitenciārā sistēmā.

Izglītībai penitenciārās iestādēs jāatbilst krimināli tendētu personu vajadzībām un cerībām, kas atrodas ieslodzījumā. To jāpielāgo tā, lai krimināli tendētas personas, kas izcieš sodu, atbrīvojoties, bez problēmām varētu turpināt izglītoties augstākajās izglītības iestādēs, ja viņi izrāda interesi. Penitenciārajām iestādēm ir jānodrošina, ka izglītotie nav izolēti no sabiedrības. Izglītības priekšrocība penitenciārās iestādēs ir tā, ka to ieguvušie krimināli tendēti indivīdi kalpo par piemēru citiem krimināli tendētām personām, tādējādi motivējot viņus iegūt izglītību, kas, pēc autora domām, ir nenovērtējams ieguldījums apcietināto turpmākajā attīstībā.

Krimināli tendēto personu izglītība nav vienīgais faktors, kas ietekmē recidīvu; tā ir arī cieši saistīta ar pozitīviem rezultātiem nodarbinātības jomā pēc atbrīvošanas.

Saskaņā ar pētījumiem, Amerikas Savienotajās Valstīs ir augstākais krimināli tendēto personu uzturēšanas līmenis pasaulē. Ir konstatēts, ka tiem, kuri piedalījās penitenciārās izglītības programmās, bija par 43% mazākas iespējas atgriezties pie noziedzīgām darbībām nekā tiem, kuri to nedarīja. Turklāt nodarbinātības iespējas pēc atbrīvošanas no cietuma bija augstākas tiem, kuri piedalījās penitenciārās izglītības programmās. Izglītības un nodarbinātības programmu priekšrocības ievērojami pārsniedz šādu programmu izmaksas (Becker Pestka, 2020).

Daudzās valstīs tendence rāda, ka krimināli tendēto personu izglītība kļūst par prioritāti, kas nav nodokļu maksātāju naudas izšķērdēšana, bet gan ieguldījumam ir sociāli ekonomiska vērtība. Turklāt krimināli tendēto personu izglītība ir ceļš uz cilvēku atbrīvošanu no vardarbības, bezdarba un nabadzības.

Izglītība sniedz jaunas zināšanas un prasmes, kas nepieciešamas dzīves kvalitātes uzlabošanai, kā arī dod otru iespēju noziegumus pastrādājušiem cilvēkiem. Izglītots cilvēks ir pašpārliecinātāks, viņam ir iespēja uz labāku dzīvi, un izglītotiem cilvēkiem ir lielākas izvēles iespējas. Izglītība paver jaunas iespējas, jo īpaši attiecībā uz nodarbinātību un tālākizglītību. Cietuma izglītība māca sociālo atbildību un veicina personības transformāciju.

Analizējot pētījumus, kas veikti Polijā, var identificēt šādus pozitīvus aspektus: krimināli tendētas personas visvairāk interesējas par izglītību, ko piedāvā cietumu profesionālās skolas. Krimināli tendētām personām tiek sniegtas reālas iespējas iegūt profesionālu kvalifikāciju un atrast darbu pēc atbrīvošanās no cietuma. Lielākajā daļā penitenciāru iestāžu ir izveidoti profesionālās izglītības centri, kur apmācība tiek organizēta saskaņā ar attiecīgajiem likumdošanas aktiem un viņu izglītības līmeni. Pastāv arī profesionālās kvalifikācijas kursi, kas faktiski aizstājuši profesionālās pieaugušo skolas. Izglītības programmas penitenciārās iestādēs un attiecīgie skolotāji strādā pēc tām pašām izglītības programmām un ievēro tās pašas normas kā brīvībā esošo skolu izglītības programmas. Visas

izglītības programmas penitenciārajās iestādēs piedāvā iespēju izglītoties visiem krimināli tendētām personām, kuri vēlas iegūt izglītību, pabeigt pamatskolu un nepilnu vidusskolu, kā arī apgūt kursus vai iegūt profesionālo izglītību.

Polijā ļoti svarīga un attīstīta metode, strādājot ar krimināli tendētām personām, ir attālinātā izglītība, kurā tiek izmantoti saziņas līdzekļi, piemēram, datori un internets. Attālinātā izglītība, kas tiek izmantota darbam ar krimināli tendētām personām, ir ļoti mūsdienīga un efektīva risinājuma metode, kas nekonkurē ar cietuma skolām, bet gan atvieglo visiem interesentiem iespēju iegūt izglītību dažādos veidos, ja kāds no ierastajiem veidiem ir neiespējams.

Itālijā, Dānijā, Norvēģijā, Somijā, Francijā un Vācijā krimināli tendētām personām tiek piedāvāta iespēja mācīties un turpināt izglītību, lai tā nākotnē sniegtu tiem noteiktu finansiālu labumu. Vācijā krimināli tendētām personām pat izmaksā skolas stipendijas, Itālijā tiem piedāvā skolas palīdzību, bet Zviedrijā izglītību apmaksā tāpat kā jebkuru citu darbību (Becker Pestka, 2020).

Arī šajās valstīs liela nozīme tiek pievērsta prasmju attīstībai, piemēram, glezniecībai, grafikai, skulptūrai un svešvalodu apguvei. Īpaša uzmanība tiek pievērsta arī krimināli tendēto personu fiziskajai aktivitātei. Viņi var izmantot sporta zāles ar treniņu iekārtām, piedalīties komandu spēlēs. Daudzas valstis jau sen ir apzinājušās krimināli tendēto personu izglītības nepieciešamību un to profesionālo interešu attīstību penitenciārajā sistēmā. Krimināli tendētas personas saņem atbalstu no savām penitenciārajām iestādēm un tiem tiek piedāvātas iespējas ne tikai izglītoties, bet arī saņemt finansiālu palīdzību un atbalstu no izglītības jomā esošiem speciālistiem.

Spānijā izglītības programmās penitenciārajās iestādēs dod priekšroku pamatizglītībai neizglītotiem krimināli tendētām personām, nepilngadīgajiem un ārvalstu krimināli tendētām personām, kā arī krimināli tendētām personām, kuriem ir īpašas grūtības piekļūt izglītībai. Penitenciārajos centros galvenais uzsvars tiek likts uz pieaugušo rakstīšanas un lasīšanas kursiem, zināšanu nostiprināšanu, vidējo izglītību pieaugušajiem, alfabēta mācību un spāņu valodas kursiem ārzemniekiem, vidusskolām, profesionālo izglītību vidējā un augstākā līmenī, oficiālo valodu skolām.

Aplūkojot valstis kā Zambiju un Malaiziju, var redzēt, ka izglītības izmantošana cietumos kā veids, kā atjaunot noziegumus izdarījušas personas, kļūst par pieaugošu tendenci penitenciārajā sistēmā. Penitenciārā izglītība Zambijā tiek uzskatīta par svarīgu rīku uzvedības, normu un zināšanu maiņai krimināli tendēto personu vidū, kas izcieš sodu, lai sagatavotu viņus pakāpeniskai resocializācijai sabiedrībā (Kakupaa & Mpundu Mulenga, 2021). Zambijā darba iegūšana pēc atbrīvošanās ir īpaši svarīga krimināli tendētām personām, jo tā nodrošina stabilitāti, ienākumus un samazina bijušo krimināli tendēto personu atgriešanās varbūtību noziedzīgajā dzīvē. Tāpēc galvenais cietuma mērķis ir nodrošināt, ka pēc atbrīvošanās krimināli tendētas personas atstāj penitenciārās iestādes ar pilnu prasmju komplektu produktīvai dzīvei. Protams, penitenciārās

izglītības vēl ir jāpilnveido, jo trūkst izglītības individuālajai attīstībai. Ir arī dažādas jomas, kas jāpēta turpmāk, piemēram, cietumu vadības pilnvaras un kontrole, kas liek šaubīties par nozieguma un krimināli tendēto personu iespēju paplašināšanas un attīstīšanas teorijas piemērošanu. Pētījumā skaidri uzsvērts, ka lielākajā daļā penitenciāro iestāžu trūkst konsultantu un psihologu, lai sniegtu palīdzību krimināli tendētām personām. Kaut arī krimināli tendētām personām piedāvātas profesionālās prasmju apmācības, nav veiktas nekādas pūles risināt viņu pamata psihosociālās problēmas. Tas liecina, ka šajā virzienā nepieciešams veikt padziļinātus pētījumus.

Malaizijā noziedzīgu nodarījumu novēršanai izmanto daudzkomponentu terapiju, kas ietver četrus komponentus: (1) iejaušanās ģimenes dzīvē, (2) iejaušanās vienaudžu vidē, (3) izglītības un profesionālā iejaušanās, un (4) kopienas atbalsta sistēmas iejaušanās (Mohd Azam et al., 2021). Malaizijā īpašs uzsvars tiek likts uz resocializāciju, kas saistīta ar akadēmisko un profesionālo sagatavošanu, jo šie divi aspekti spēlē noteicošu lomu ne tikai pieaugušo, bet arī bērnu noziegumu izdarījušo attiecībās. Daudzi pētījumi ir parādījuši, ka izglītība pozitīvi ietekmē cilvēku, jo tā ne tikai sniedz nodarbinātības iespējas, bet arī iespēju gūt labu ienākumu, un izglītība veicina bērnu noziegumu izdarījušo resocializāciju, labojot viņu uzvedību. Bet pētījuma rezultātā secināts, ka izglītības uzsvērums nav pilnībā ieviests un nedarbojas tā, kā bija paredzēts. Lai gan ir skaidrs, ka akadēmiskā vai profesionālā sagatavošana izglītības nolūkos ir viena no svarīgākajām rīcībām, lai resocializētu noziegumu izdarījušus bērnus, izglītība palīdzēs bērnam sociālajā pielāgošanā un uzlabos uzvedību, kas turpmāk veicinās bērna attīstību. Noziegumu izdarījušie bērni noteikti ir jāpiedalās sabiedriskajā resocializācijā un jāturpina izglītība vai jāiesaistās profesionālā apmācībā.

Izglītība penitenciārajā sistēmā ne tikai Eiropas valstīs, bet arī tādās valstīs kā Zambija un Malaizija, palīdz paplašināt krimināli tendēto personu tiesības un iespējas un nodrošina reālas iespējas veiksmīgai sociālai rehabilitācijai. Tajā pašā laikā cietuma izglītība izvirza izaicinājumu pedagogiem, sociālās rehabilitācijas konsultantiem, psihologiem un tiesu sistēmai. Tas ir svarīgs sociāls jautājums, ņemot vērā stereotipus un aizspriedumus pret bijušajiem krimināli tendētām personām, kas izcieš sodu, kuri joprojām darbojas darba tirgū.

Šie secinājumi, kas balstīti uz pētījumiem, var mudināt zinātniekus veikt dziļākus pētījumus izglītības, resocializācijas un darba metožu jomā ar krimināli tendētām personām, jo šīs personas ir īpaša grupa, kas ir uzņēmīga pret sociālo izolāciju. Izglītība paaugstina pašvērtējumu un palīdz krimināli tendētām personām, kas izcieš sodu, ticēt sev un savām iespējām. Šajā gadījumā izglītība darbojas kā instruments, kas tiek izmantots pret krimināli tendēto personu sociālo izolāciju. Dažādu valstu īstenotie risinājumi varētu turpināt tikt apspriesti attiecībā uz krimināli tendēto personu izglītības stāvokli un nozīmi.

## **Secinājumi** **Conclusions**

Pētījums apliecina, ka krimināli tendētu personu īpatnības, izglītības un apmācības problēmas būtiski atšķiras atkarībā no konkrētas valsts sociālekonomiskajiem un tiesiskajiem apstākļiem. Tādējādi ir akcentēta individuāli pielāgotu resocializācijas metožu nepieciešamība, kas spēj adresēt šīs specifiskās vajadzības un problēmas. Resocializācijas process ir izšķirīgs solis cilvēku reintegrēšanā sabiedrībā pēc sodu izciešanas, veicinot zaudēto tiesību un privilēģiju atjaunošanu un mīkstinot sabiedrisko nosodījumu.

Eiropā un Ziemeļamerikā īstenotās rehabilitācijas programmas, kas ietver izglītību, profesionālo sagatavošanu un psiholoģisku iejaukšanos, norāda uz šo elementu nozīmīgumu efektīvā resocializācijas procesā. Programmas, kas ir pielāgotas atbilstoši nozieguma veidam un personu individuālajām vajadzībām, ir fundamentālas krimināli tendētu personu veiksmīgai reintegrācijai sabiedrībā.

Efektīvāku noziedzības novēršanas un resocializācijas stratēģiju izstrādei ir būtiska izglītības problēmu rūpīga analīze krimināli tendētu personu vidū. Ir nepieciešams organizēt intervijas un aptaujas ar šīm personām, lai labāk izprastu, kā uzlabot apstākļus cietumā un izstrādāt atbilstošas izglītības programmas. Turklāt svarīgi ir apzināties sabiedrības kultūras, dzīvesveida, attiecību un cerību ietekmi uz sociālizācijas procesu, kas var veicināt vai kavēt resocializāciju.

Visbeidzot, secinājumi akcentē nepieciešamību pēc kompleksa pieejas, kas ietver ne tikai izglītību, bet arī sociālo, psiholoģisko un profesionālo atbalstu krimināli tendētu personu veiksmīgai reintegrācijai sabiedrībā. Tādējādi tiek uzsvērtā izglītības un atbilstošu rehabilitācijas programmu nozīme, kas jāīsteno, balstoties uz pētījumiem un praktiskās pieredzes analīzi, lai nodrošinātu efektīvu un ilgtspējīgu krimināli tendētu personu resocializāciju.

Pētījuma gaitā tika atklāts, ka krimināli tendētu personu resocializācija ir daudzdimensionāls process, kas prasa integrētu pieeju, iekļaujot izglītību, profesionālo sagatavošanu un psiholoģisko atbalstu. Šajā kontekstā Latvijas Republikas valdības apstiprinātie Ministru kabineta noteikumi Nr. 726, (2023), kas paredz IeVP turpināt attīstīt krimināli tendētu personu resocializācijas procesu, ir būtisks solis uz priekšu, nodrošinot krimināli tendētu personu veiksmīgu atgriešanos un iekļaušanos sabiedrībā, īpaši uzsvērot nodarbinātības jomas nozīmi.

Šis solis ir svarīgs atzīmējums Latvijas apņēmībā veicināt efektīvākas resocializācijas stratēģijas, kas balstītas uz izglītības un profesionālās apmācības iespēju paplašināšanu. Tas rāda valsts gatavību pielāgot un uzlabot esošās prakses, lai nodrošinātu, ka krimināli tendētas personas, atgriežoties sabiedrībā, ir sagatavotas produktīvai dzīvei, ar pilnu prasmju un kompetenču komplektu.

Turklāt, ieviešot šos noteikumus, tiek uzsvērtā nepieciešamība pēc plašākas sabiedrības iesaistīšanās resocializācijas procesā, veicinot pozitīvu attieksmi pret

bijušajiem ieslodzītajiem un atbalstot viņu integrāciju darba tirgū. Tas arī akcentē izglītības un mācību programmu nozīmi, kas ir pielāgotas, lai atbildētu uz krimināli tendēto personu specifiskajām vajadzībām un mērķiem.

Pamatojoties uz šo, ir skaidrs, ka Latvijas valdības pieņemtie lēmumi un politikas veidošanas procesi var būtiski ietekmēt krimināli tendēto personu resocializācijas efektivitāti. Tāpēc ir būtiski turpināt šo politikas virzienu attīstību un novērtēt tā ietekmi uz krimināli tendēto personu dzīvēm, kā arī uz sabiedrību kopumā.

## **Kopsavilkums**

### ***Summary***

The research explores the educational challenges in the resocialization process of criminally inclined individuals. It aims to analyze the educational aspects of a criminal's personality during resocialization, contributing to their more effective integration into society. Additionally, the study seeks to understand how social, cultural, biological, and psychological factors influence the motivation and behavior of criminals, especially during incarceration. The author investigates new and improved ways to prevent and address various forms of delinquent behavior and to involve deviant personalities in preventive programs within the educational process. The findings of the research will aid in developing more effective strategies for preventing criminal offenses and resocializing criminal personalities into society. To achieve positive resocialization outcomes for criminally inclined individuals, it is necessary to implement various methods, programs, and psychotherapeutic approaches in prisons and medical institutions. The scientific research aims to pinpoint problems and facilitate the social reintegration process for criminally inclined individuals within the Latvian social system, promoting changes in deviant behavior, reevaluation of moral and legal norms, respect for the rights of others, and the adoption of a lifestyle in a democratic society. The selected research methods will offer a comprehensive insight into the development of a criminal's personality and the influencing factors. The monographic method will be utilized to describe existing research findings and conceptual explanations of the personality of a criminal and its formation mechanisms. The comparative method will be used to contrast the challenges of preventing unlawful actions by criminally inclined individuals in Latvia and other countries. Data collection and analysis will integrate objective information. The comparative method will identify both commonalities and distinctions among various countries and approaches. The study's tasks will include several key actions, such as analyzing the characteristics of a criminal's personality, examining the process of forming a criminal's personality, suggesting measures to mitigate the negative impact of macro-environmental factors, and formulating resocialization proposals. The novelty of



the study lies in the changes in cultural values and social norms that influence the behavior, motivation, and transformation of social values of criminally inclined individuals.

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# POTENTIAL IMPACT OF FEUERSTEIN INSTRUMENTAL ENRICHMENT ON SELF-CONCEPT OF LEARNERS WITH BEHAVIOURAL PROBLEMS

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**Abstract:** *The article was prepared within preparatory phase of research on impact of Feuerstein Instrumental Enrichment (FIE) on self-concept of learners with behavioural problems. Its goal is to reveal the current state in research field concerning this topic in the Czech Republic. The programme FIE has been used in the Czech Republic since 1999, mostly for learners with special educational needs. The theoretical and research sources mostly describe the impact of FIE on the development and change of cognitive structures, the development of the art of learning and thinking (metacognition). Moreover, as one of the secondary objectives is also mentioned the restoration of a positive self-concept of the learners, precisely in compliance with the criteria of the mediated learning experience, e.g. by increasing the sense of competence of the learners and by learning to regulate their own behaviour. Thus, it influences the formation of healthy self-concept, self-confidence and self-acceptance of individuals participating in FIE. Generally stated, people who have a negative self-concept and/or low self-confidence are more likely to exhibit problem behaviour, whether in the family, school or wider social environment.*

*In the Czech provenance, we found three studies that primarily address the impact of FIE on learners with behavioural problems - first on learners with serious behavioural problems living in residential educational institutions, second on learners with ADHD and third on children with problem behaviour. We managed to find four studies that partially aim to determine the level of self-concept/confidence/self-esteem/self-acceptance of FIE attendees. Five studies then report on the effect of FIO on self-concept/self-confidence/self-esteem/self-acceptance and six other studies present the impact of FIO on behaviour change of attendees (mentioned mostly as a side effect because the studies primarily did not address these aims).*

**Keywords:** *behavioural problems, Feuerstein Instrumental Enrichment, study search.*

## Introduction

The goal of the search study was to reveal the current state in research field concerning the impact of FIE method on self-concept of its attendees in the Czech Republic to prepare the basis for planned further research. In schools, quite a lot of energy is devoted to dealing with problem behaviour of learners. School counselling workers, and also counselling workers from external counselling facilities search for appropriate solutions on a daily basis. Learners with problems in behaviour may have a distorted self-concept (self-esteem), which can make the situation even worse. We suspect that Feuerstein Instrumental Enrichment (FIE)

method may be a potential tool that can be used in such cases. FIE method has been used mostly for the development of cognitive functions of children, pupils and students with special educational needs (underachievers), but also for children and adults without any significant difficulties to develop their metacognition. But FIE method has also been reported to have a positive impact on the self-esteem and sense of competence of its attendees, potentially leading to the restoration of their positive self-concept that may be distorted (partially negative or negative). We intended to reveal if some studies already confirmed this impact and also to gain some inspiration for our further research.

## **Literature Review**

Defining problem behaviour is not very straightforward, as this issue is the focus of several scientific disciplines (psychology, psychiatry, neurology, social sciences, special education, social education, education, etc.). Due to this fact, there is even no agreement on a uniform terminology, so we can encounter terms such as behavioural disorders (specific and non-specific), problem behaviour, risky behaviour, behavioural problems, problematic behaviour, non-standard behaviour, disorders of conduct and emotions and others. M. Hutyrová, J. Spěvák and M. Charvát explain that in the Czech Republic the term behavioural problems is “very broad and covers a variety of phenomena, some representing developmental norms, some temporary social maladaptation and some behaviour-breaking social norms” (Hutyrová, Spěvák & Charvát, 2014, 1027). So most of the time, individuals are classified as having behaviour problems based on outward manifestations of behaviour that violate a certain norm. This raises the question of what the norm actually is. It is also necessary to consider the aetiology of such outward manifestations of behaviour (internal - neurodevelopmental or external in the child's environment, and their possible and frequent combinations). P. Jedličková and A. Klimentová doubt the deterministic “cause and effect” point of view and conclude that the origin of individuals’ difficulties is in “the interaction of several pathogenic genetic / dispositional, family, and social factors.” (Jedličková & Klimentová, 2024, 34) The age of the individual, specifically the appropriateness of the outward manifestations of behaviour for the age of the individual, also plays a relatively important role. For example, difficulties in respecting authorities may be a natural and important part of the development of individuals’ identity (the defiance in toddlerhood, puberty or adolescence). Last but not least, the frequency of such outward manifestations of behaviour and their duration must also be taken into account. M. Růžička states that based on the medical criteria that are currently still in force, such manifestations should occur for at least 6 months (Růžička, 2013). The question is whether these individuals consciously experience their behaviour and understand it as *not the norm*. We should consider what impact this has on

their inner experiencing and quality of life. We should never see problem behaviour as given; we should talk about the individuals who have the problem, not the problem individuals. We need to separate the negative manifestations of the individuals' behaviour from the individuals themselves. This brings us to the question of individuals' value orientation, self-assessment, self-esteem and overall self-concept. When working with such an individual (in attempts to help him/her), we should be based on his/her self-reflection (Pokorná, 2004). All of above mentioned leads us to seek for a tool that has an impact on the self-esteem (self-concept) of its users and FIE method was reported to have such an effect on its attendees.

FIE represents method of cognitive education that as opposite to content education focuses on development of cognitive abilities of persons and it is founded on several theoretical pillars such as (deficient) cognitive functions, cognitive map, the theory of structural cognitive modifiability and mediated learning experience. Feuerstein understood *cognitive functions* (thinking skills) to be prerequisites to operational, internalized representational thinking. He grouped them and their deficient versions according to three phases of thinking to level of input (taking in stimuli), level of elaboration (thinking through the problem), and level of output (communicating a response). The deficit cognitive functions at the input level cause difficulties in collecting data prior to solving the task, at the elaboration level deficit functions hinder effective use of data, and at the output level they limit adequate communication of task results. (Harth, 1982) The concept of *the cognitive map* explains how the structure of human cognitive functions is organised. The cognitive map enables the description of human cognitive processes (thinking and acting) on the basis of seven parameters (content, modality, operation, phase, level of complexity, level of abstraction and level of difficulty) and, it facilitates the preparation of content, structure, materials, etc. for the instrumental enrichment method. (Pokorná, 2004; Málková, 2008; Lucká & Chadimová, 2019)

*The theory of structural cognitive modifiability* can be explained briefly in simple terms as a belief in the enduring potential of humans to develop and to change throughout life, and its neurobiological basis is the neuroplasticity (the process of brain development, which is modelled by both internal and external aspects, i.e. the environment). Cognitive functions of a person do not develop only by person's own experience or contact with stimuli (the surrounding world, environment), but also in connection with the so-called *mediated learning experience*, in which the mediator - the adult (parent, grandparent, teacher, ...) plays an important role. The mediator stands between the child and the stimuli and transmits/mediates them to the child on the basis of his/her own experience with them in order to ensure that the child perceives, understands and integrates them in a meaningful way. The learning situations can be considered mediated learning experiences only if they meet certain criteria. Three criteria are essential:

1) intentionality and reciprocity (focused learning – situation is based on the learner's needs and it is seeking the learner's involvement), 2) transcendence (bridging learning – using knowledge in different contexts) and 3) meaning of the learning (purposeful learning – being aware of the significance and value of the knowledge). Other nine criteria are used differently in different learning situations. For the purpose of our research design following criteria are central: mediating a sense of competence, controlling behaviour and promoting sharing and communication, all of which have the potential to influence learners' self-concept. (Feuerstein, Feuerstein, Falik & Rand, 2014; Leeber, 2002; Pokorná, 2004; Málková, 2008)

The FIE method consists of approximately 500 pages of paper and pencil worksheets, on which attendees work under the guidance of a mediator/teacher/lecturer. The worksheets are organised into 25 instruments (workbooks) at two levels – standard – for the target group from about 8 years of age, and basic – for children from pre-school age, or people with intellectual disabilities. Each of the instruments develops certain cognitive functions, but it also has an impact on other circumstances related to learning. For example, cognition is not separated from emotions in the FIE method. Cognition (thinking) evokes emotions, so whenever we perform cognitive operations, emotional elements are the energetic force manifested in our behaviour. Some instruments are even primarily aimed at supporting cognition in connection with the development of emotions (*Recognition of Emotions, From Empathy to Activity, Compare and Reveal Absurdities and Think to Learn to Prevent Violence*) (Hutyrová, 2014; Hutyrová et al., 2014).

## Methodology

In the intended research we plan to investigate the impact of Feuerstein Instrumental Enrichment (FIE) Method on self-concept of learners with problems in behaviour. In its preliminary phase, we aim to determine the current state of research in the Czech Republic to gain inspiration by existing research for preparation of the basis of our study. We performed study search that was guided by four main goals. The first of all, to find out if there is any study in the Czech Republic that focuses on the impact of FIE on children/students with problems in behaviour (behavioural problems). The second goal was to identify studies in the Czech Republic that aimed to recognize the impact of FIE on the self-concept/confidence/confidence/acceptance of its attendees (in general and attendees with problems in behaviour). The third goal was to determine whether any studies examining primarily the effect of the FIE method on cognitive functions reported as a side effect the impact of FIE on the self-concept/confidence/esteem/acceptance of its attendees. The final goal was to realize if any

studies in the Czech Republic reported behavioural changes in its participants (with/without behavioural problems) as a side effect of FIE method.

The search was conducted using six keywords/phrases in Czech language (Feuerstein, Feuerstein's method, Feuerstein Instrumental Enrichment, mediated learning and cognitive structural modifiability) on the *knihovny.cz* portal, which includes the collections of books and journals of all libraries in the Czech Republic. Furthermore, the *theses.cz* qualification thesis register and the *Google Scholar system* were searched. Last but not least, we used also multi-search engine the EBSCO Discovery Service (EDS). We searched for studies from 2000 to 2023. The choice of the initial year was based on the official start of FIE method use in the Czech Republic.

We excluded some of the studies based on following criteria: no description of a practical study (only theoretical assumptions included); research was not conducted in the Czech Republic (but e.g. in Slovakia); the effect/impact of the FIE method was not evaluated; the resource referred to study described in another already included resource (multiple presentation of one study results); qualifying theses that were not defended or those of poor opponents' evaluation due to methodology faults.

In the Czech provenance, we found three studies that primarily address the impact of FIE method on learners with problems in behaviour – first on learners with serious behavioural problems living in residential educational institutions, second on learners with ADHD and third on children with problems in behaviour. We managed to find four studies that partially aim to determine the level of self-concept/confidence/self-esteem/self-acceptance of FIE method attendees. Five studies then report on the effect of FIE method on self-concept/self-confidence/self-esteem/self-acceptance and six other studies present the impact of FIE method on behaviour change of attendees, both last groups of studies mention it as ulterior finding of the research.

## Results

Out of the first group of studies, aimed primarily on effect/impact of FIE method on learners with problems in behaviour, the first resource informs about study conducted by Hutyrová et al. (2014). This article actually does not provide any effects/impacts of FIE method as it only describes research in a phase of data collection. We did not manage to find another source that would present the results of this study. We report about this study mainly because of three reasons. First, because one of its aims was “to map the potential for employing this program<sup>1</sup> in the institutional education facilities in the Czech Republic, where its implementation could lead to desirable changes in their clients' behaviour”

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<sup>1</sup> Meaning FIE method.

(Hutyrová et al., 2014, 1027). Second, it is inspiring in terms of the used method of data collection because one of the used tools was Questionnaire on children's self-perception of school success - SPAS (the questionnaire that provides information on the children's approach to his/her own school performance) that might be used in our study alongside other tools when determining the self-concept of FIE method attendees. And the third reason is the character of research approach of this study. It was planned to collect the data from over 400 individuals meaning that the results could be more representative than those of most other studies we found (mostly qualitative or mixed research design *with low numbers* of participants).

The second study from this group was presented in master thesis by Z. Tihelková. This study was aimed at learners with attention deficit hyperactivity disorder (ADHD). The study was qualitative in its nature, it was conducted on 2 pupils at the age of 7 and 8 that participated in FIE method over seven months and for the whole time they were being observed and their tasks were analysed. The author set 4 goals – how the FIE method impacts pupils' development of communication, concentration of attention, impulsivity and working autonomy. According to the results of this study pupils positively changed in all above mentioned aspects, concerning the behaviour they were more likely to regulate their behaviour while working on the task. (Tihelková, 2016)

M. Bořkovcová was in her study interested in the potential effect of her own method “Children together” (based strictly on principles of FIE method) on collecting diagnostic data on learners with behavioural problems and behavioural disorders. The author used action research method – precisely analyses of observations, audio-recordings, pupils' works and interviews. The results show that the method can be used to collect diagnostic data about pupils' problems in behaviour, self-regulation, ability to deal with conflicts, social recognition and self-reflection. The advantage of the method “children together” is according to the results of the study also in its potential to be used as intervention method for individuals with problems in behaviour (Bořkovcová, 2017).

The second group of studies – those that partially aimed to determine the level of self-concept/confidence/self-esteem/self-acceptance of FIE method attendees – is represented by the study described in doctoral dissertation of H. Burešová. The author primarily targeted at the development of reading strategies in individuals with dyslexia while using teaching material based on principles of FIE method. The quantitative part of study examined the change in the self-concept concerning school success of learners with dyslexia. The author used Questionnaire on children's self-perception of school success (SPAS) and Questionnaire Myself as a learner (MALS) in pre- and post- intervention phase. The results of this quantitative part of study did not show any significant difference in learners' self-concept concerning school success which might be



caused by the insufficient length of the intervention and timing of the post-intervention phase that took place in the period of final grading according to author's conclusions (Burešová, 2017).

The comparative pre-post experimental study of L. Ševčíková primarily explored the impact of FIE method on cognitive functions of its attendees but also partially aimed at potential changes in attendees' personality – changes in their self-esteem, or increased motivation to learn. Cognitive functions were measured by standardised tests and obtained data processed statistically, the results showed improvement in several cognitive functions. The self-esteem assessment was based on results of questionnaire for attendees of author's own construction. (Ševčíková, 2006). L. Ševčíková concluded that FIE method influences positively self-esteem but at the same time she admitted that the interpretation of the questionnaire results should not be considered convincing (Ševčíková, 2006).

The third study in this group is the one by G. Málková. This study resembles the previous study (by Ševčíková) by its design and also by focus on areas of cognitive abilities and self-esteem. In addition, it explored the effect of FIE method on IQ and school attainment. Effect sizes for experimental group were large in tests of cognitive abilities and nonverbal IQ. Positive effect of method was also demonstrated at the level of improvements of children's behaviour in the classroom, learning and problem-solving strategies. The self-esteem (self-concept) was measured by Questionnaire on children's self-perception of school success (SPAS). Contrary to study's other results that proved some partial positive effect of FIE method on cognitive abilities and nonverbal IQ the results of SPAS questionnaire were not in correlation with the expectations – they did not show any significant difference. The author discussed the appropriateness of the tool (SPAS) use and outcomes of study by Romney and Samuels who revealed the difference in change of self-esteem of younger and older learners stating that younger learners might have assessed their self-esteem negatively as the FIE method was abstract and difficult for them at the beginning. (Málková, 2007)

D. Pokorná' study is the last one in this group. The design of this study appears to be similar to two mentioned previously (by Málková, 2007 and Ševčíková, 2006) – it was pre-post experimental study aimed at children's cognitive functions as well as their school success, self-concept, and behaviour (Pokorná, 2013). The difference is in the fact that in Pokorná's study research and control groups are not compared but the individual development of each FIE method attendee is discussed. The self-concept was not measured by questionnaires but it was assessed together with behaviour by teachers in their written reports and also during the analyses of video-recordings. Contrary to previous study Pokorná stated that all learners that were reported by teachers to exhibit problems in self-concept improved in it (Pokorná, 2013).

The third group consists of five studies mentioning the effect of FIE method on self-concept/self-confidence/self-esteem/self-acceptance of FIE attendees. A. Schmaltzová's qualitative study targeted at the effect of FIE method on pre-school children with communication disorders. In this study, among others, *improved self-esteem*, reduced impulsivity and increased attention, were observed in all attendees (Schmaltzová, 2015). The main goal of J. Suchánek's study was to describe possibilities to implement FIE method into school curriculum. His participants – lecturers of FIE method – reported *influence* on learning, behaviour, attention and *self-concept*, specifically on *raise of self-esteem*, respect to others, development of empathy and prevention of drop-outs (Suchánek, 2020). The study of V. Jašková during which were observed changes in learners with different special educational needs attending FIE method and at the same time using principle of mediated learning experience throughout the whole school instruction lasted over three years. Within the in-depth description of changes in each of participants were also mentioned *the raise of self-esteem* and reduction of aggression (reported by parents), *development of self-confidence* (reported by teachers) and significant progress in the ability to assess oneself leading to *increasing healthy self-esteem* (based on long-term observations) (Jašková, 2020). V. Beranová conducted a qualitative study with 5 special education teachers that were trained in FIE method and used it while working with pupils with different special educational needs. Participants were asked about their motivation to choose FIE method, experience when being trained and practical experience with its use. The participants most often agreed on following advantages of FIE method: calming down attendees, developing of independence and planning skills. Some of the participants also mentioned *effect on self-esteem* of FIE attendees. (Beranová, 2022) Also 5 lecturers of FIE method that participated in B. Grisníková's study agreed on the positive effect of method on *self-esteem* of its attendees (Grisníková, 2015).

The last group of studies mentions some impact of FIE method on behaviour of its attendees (different ages, different characteristics) as side effect of the research. Reading the results of these studies we conclude that the behaviour of FIE method attendees has changed in pro-group/pro-social direction. The authors mostly mentioned: greater respect and tolerance to others in the group (Foltýnová Nešporová, 2022; Baštová, 2019; Křížková, et al. 2018), increased willingness to listen to others in the group (Foltýnová Nešporová, 2022; Fišarová, 2013; Klausová, 2019; Křížková et al., 2018), improvement in cooperation with others (Foltýnová Nešporová, 2022; Mikošková, 2017) and V. Baštová added development of empathy (Baštová, 2019). Moreover, the authors indicated reduction of impulsivity while working on task but interestingly also in connection with group communication – FIE method attendees controlled more effectively their need of self-promotion (Foltýnová Nešporová, 2022; Mikošková, 2017; Klausová, 2019; Křížková, Pecharová, Váňová, Žišková & Vysopal, 2018).

## Conclusions

We have found studies that focus on the impact of the FIE method on individuals with problems in behaviour. However, only one of these studies has partially focused on uncovering the possible impact on the self-concept of this target group. Unfortunately, we were unable to locate any source describing the results of this study. Before starting the next phase of our research, we will try again to track down these results so that, if nothing else, we can at least compare them with the results of our planned study.

Some studies examining the effect of the FIE method describe impact on either self-concept (self-esteem) or behaviour of its attendees (or on both of them). Yet, the results of these studies diverge. This may be due to the use of a particularly qualitative or mixed research design in these studies with a relatively limited number of participants. So that the results cannot be generalised and are valid only for the specific target group of each of these studies. To conclude, just as the participants are diverse, so are the results.

We did not find any study that purely dealt with the self-concept of FIE method attendees, and certainly not in the context of individuals with problems in behaviour. This supports our belief that the planned research is original, of high importance and may yield important insights regarding the impact of the FIE method on its attendees' self-concept, particularly those with problems in behaviour.

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# EXPLORING THE CONSISTENCY BETWEEN TEACHERS' AND PARENTS' RATINGS OF CHILDREN'S LANGUAGE SKILLS

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**Abstract.** *Aim:* The study investigated the correspondence between parent and teacher assessments of 3 to 6-year-old children's language skills using the Expressive and Receptive Language Scales from the Early Childhood Developmental Screening Toolkit – BAASIK (an acronym in Latvian).

*Material and methods:* Ninety-five preschool teachers and 424 parents participated in an online survey assessing the expressive and receptive language skills of children aged 3 to 6 years.

*Results:* Spearman's correlation analysis revealed statistically significant ( $p < .001$ ) moderate to strong correlations between the ratings of children's language skills by parents and teachers. For the Receptive Language Scales, correlations ranged from  $r_s = .43$  to  $r_s = .6$ , and for the Expressive Language Scales, from  $r_s = .54$  to  $r_s = .64$ .

*Conclusions:* The study confirmed that parents' and teachers' assessments of children's expressive and receptive language skills are significantly correlated. The BAASIK Expressive and Receptive Language Scales used by both parents and teachers could be effective for early screening, potentially aiding in the prompt identification of language development issues and the subsequent referral to speech and language therapy services.

**Keywords:** BAASIK, children, expressive language, parents, receptive language, screening, teachers.

## Introduction

Developmental language disorders are characterized by persistent deficits in acquiring, understanding, producing, or using language that arise during the developmental period, typically in early childhood, and cause significant limitations in the individual's communication abilities (WHO, 2018). Children may be described as having language disorders if they demonstrate significant deficits in learning to talk, understand, or use any aspect of language appropriately, compared to both environmental and norm-referenced standards for children at similar developmental stages (Paul, 2007).

The current research was part of a larger project aimed at developing a set of screening instruments for assessing early childhood development from 12 months to 6 years. The speech and language part of the screening toolkit (in Latvian, *Bērnū agrīnās attīstības skrīninga instrumentu kopums (BAASIK)*, Early Childhood Development Screening Toolkit, Raščevska et al., 2024) included assessments of expressive and receptive language, speech sound development, and fluency. The toolkit also featured scales for evaluating motor coordination, cognition, adaptive behavior, autistic spectrum disorders, attention deficit and hyperactivity, behavioral disorders, emotional development, and early literacy, numeracy, child-parent interaction, and parenting skills.

The study aimed to investigate the agreement between teachers' and parents' reports on 3 to 6-year-old children's expressive and receptive language abilities and the consistency within children's expressive and receptive language abilities as reported in a single type of survey.

### Literature review

Assessing language in children, particularly at an early stage, is pivotal as it can identify those at risk of language delays or disorders, enabling timely interventions to help them catch up with their peers and achieve their full potential. Early intervention not only aids in language development but also enhances social and emotional well-being, communication skills, and academic success. Early language assessment aims to pinpoint children's linguistic strengths and challenges to provide tailored support and interventions.

The evaluation of preschool children's language should consider both receptive and expressive components, encompassing tasks that can identify issues related to phonology, syntax, morphology, semantics, word finding, pragmatics, discourse, verbal learning, and memory (Bishop, Snowling, Thompson, & Greenhalgh, 2017; Sattler, 1992). The relationship between expressive and receptive language is integral to linguistic proficiency. As children refine expressive language skills, their receptive language abilities expand in tandem and vice versa (Paul, 2007).

It is recommended that assessments draw from various information sources, such as interviews or questionnaires with parents or teachers, direct observations, and standardized tests or criterion-based assessments (Bishop et al., 2016; Paul, 2007; Sattler, 1992). The input from parents and teachers is vital, acting as the preliminary phase of screening before formal clinical evaluation (Sansavini et al., 2021). Concerns raised by a teacher, parent, or other professionals about a child's communication skills or academic performance often trigger the language assessment process (Hendricks, Adlof, Alonzo, Fox, & Hogan, 2019). The strategy of engaging both parents and teachers in assessments has been foundational in developing various screening tools and rating scales, justified by

the high sensitivity and specificity of such reports compared to direct child assessments (Sansavini et al., 2021; Chung et al., 2010).

Information from caregivers or teachers familiar with the child can uncover nuances of language use not evident in formal assessments, thus providing valuable additional insights (Bishop & McDonald, 2009). Moreover, checklists completed by parents or teachers are time-efficient and cost-effective, as they do not require specialized materials (Cabell, Justice, Zucker, & Kilday, 2009).

However, involving parents in developing or validating assessment tools carries risks. For instance, the Latvian language adaptation of the MacArthur-Bates Communicative Development Inventories for children aged 8-16 and 16-36 months encountered low parental response rates (8%), attributed to outreach challenges and unequal distribution of parental education levels (Urek et al., 2019). Prior research by Vulane et al. indicated that parents' assessments could be overly optimistic or pessimistic, or even superficial, impacting the accuracy of the information provided (Vulane, Taurina, Zirina, 2016).

Observations concerning a child's language development can sometimes cause anxiety among caregivers, yet these concerns often correlate with formal assessment outcomes (Chung et al., 2010; McLeod & Harrison, 2009; McLeod et al., 2017). Concerns expressed by caregivers regarding communication, motor, and social skills have been shown to align with clinical testing results, with significant correlations found between caregivers' worries and direct assessment measures of speech and language (McLeod et al., 2017). McLeod and Harrison (2009) also found a positive association between caregiver ratings of language competence and children's performance on receptive language tests in a large sample of Australian children.

The concordance of parents' and teachers' evaluations of a child's language skills also warrants attention. Kiing et al. (2019) found that preschool teachers' concerns about child development generally matched parents' ratings using the same screening instrument (Parents Evaluation of Development Status, PEDS) (Kiing, Neihart, & Chan, 2019). Similarly, McLeod and Harrison (2009) reported high agreement between parents' and teachers' language development assessments. Children identified by their teachers as being much less competent than others in expressive and receptive language were also identified by their parents as having difficulties in these areas (McLeod & Harrison, 2009). Bishop and Baird (2001) and Massa et al. (2008) noted correlations between parents' and professionals' ratings of children's communicative abilities. However, discrepancies may arise due to the context-dependent nature of communication; children behave differently across settings and observers, contributing to divergent assessments (Bishop & Baird, 2001). Furthermore, a child's level of language development can influence ratings, with parents typically scoring typically developing children higher than teachers do and lower for children with language disorders (Hauerwas & Stone, 2000).



Assessing children's language early is essential for identifying those at risk for language disorders, allowing for interventions that support their overall development. A thorough evaluation includes analyses of both receptive and expressive language through various sources, including caregiver feedback and standardized tests. However, relying on parent and teacher reports can introduce biases, as their perceptions may differ due to varying educational backgrounds or the context in which they observe the child. Studies confirm that while caregiver concerns often align with formal assessment results, there can be discrepancies between parents' and teachers' evaluations, influenced by the child's environment and the level of language development.

## Methodology

### *Participants*

The study received approval from the University of Latvia's Ethics Committee of Humanities and Social Sciences Research (Approval No. 71-46/20).

Participants were recruited through a process that targeted *preschool education teachers* based on their willingness to participate. Details about the study were circulated via kindergartens and local educational authorities, prompting teachers to volunteer. Ninety-five preschool teachers from across all Latvian administrative regions (Kurzeme, Zemgale, Vidzeme, Latgale, Riga) submitted applications, all of which were accepted for the study. These teachers were provided with comprehensive instructions for completing an online survey. They were asked to select five children whom they knew well to assess for expressive and receptive language skills.

The survey encompassed 424 children spanning various age groups: 3 years ( $n = 61$ ), 4 years ( $n = 85$ ), 5 years ( $n = 108$ ), and 6 years ( $n = 170$ ), with a male-to-female ratio of 1.2:1. A majority (81%) of the children were from two-parent families, and 75% had one or more siblings. Over 80% had been enrolled in preschool programs by age three.

Subsequently, teachers engaged the *parents* of the selected children, briefed them on the project's goals, and invited them to fill out the same online survey. The parent survey was completed by 424 individuals, predominantly mothers, for an equal number of children. These families were characterized by parental age (mean age for mothers:  $M = 34.3$  years,  $SD = 5.6$ ; fathers:  $M = 36.6$  years,  $SD = 6.2$ ), educational level (53.2% of fathers held a secondary or college degree; 57.3% of mothers had obtained a college degree or higher), and average family income (high: 44.8%, middle: 43.6%, low: 6.3%).

### *Instruments*

The BAASIK Expressive and Receptive Language Scales (Raščevska et al., 2024) included items investigating phonology, syntax, morphology, semantics, and pragmatics skills. These items were formulated as questions or declarative statements. For instance, "Does the child use short sentences in communication (at least three words, sentence constructions may be grammatically incorrect)?" or "The child can name the words with the opposite meaning (e.g., "big – small," "warm-cold," "day-night") (Expressive Language Scale). "Does the child understand the words "big" and "small"? or "The child understands complex grammatic constructions such as Janis is older than Andris, which of the boys is younger?" (Receptive Language Scale). The scale items were designed primarily based on developmental milestones. Each scale contained seven items. While the item sets were consistent across survey forms, they varied by age group, with approximately 20% of the items differing between adjacent age groups. The scales demonstrated high reliability, with Cronbach's alpha values ranging from .89 to .95 across age groups and forms; these metrics are elaborated upon in the results section. Both parents and preschool teachers were presented with the scales through an online platform.

### *Procedure*

Before the study, all preschool teachers were trained in the administration of the BAASIK. Both parents and teachers were instructed to evaluate the frequency of the child's displayed language skills as outlined in the scale items. The response options given to the respondents were: "always," "often," "rarely," or "never." Respondents were requested to select the answer "always" if the child consistently exhibited the skill in question or if the statement strongly resonated with their observations. The choices "often" or "rarely" were appropriate for skills that were observed but not consistently demonstrated. The option "never" was reserved for instances where the child did not display the skill at all. Additionally, if a respondent was uncertain, they were advised to select the option "do not know." Regarding scoring, "always" was allocated 4 points, "do not know" was scored as zero, and the other options were assigned scores from 1 to 3 points accordingly.

Data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 22.

## **Results**

The internal consistency of the BAASIK Expressive and Receptive Language Scales, tailored to each age group and featuring seven items each, was confirmed using Cronbach's alpha coefficient. For the Receptive Language scale, alphas ranged from .89 to .94 for teachers and from .90 to .93 for parents. For the

Expressive Language scale, they ranged from .94 to .95 for teachers and from .91 to .95 for parents.

*Table 1. Statistical indicators of the Expressive and Receptive Language Scales obtained from the BAASIK Parents' survey (made by authors)*

Statistical indicator	Receptive Language Scale				Expressive Language Scale			
	3 years	4 years	5 years	6 years	3 years	4 years	5 years	6 years
N	57	82	108	169	61	85	108	170
Scale mean ( <i>M</i> )	22.63	20.62	23.07	24.11	22.34	20.66	22.81	24.14
Standard deviation ( <i>SD</i> )	4.82	5.72	5.24	5.14	6.49	6.61	5.21	4.64
Median ( <i>Me</i> )	24.00	22.00	25.00	26.00	25.00	23.00	25.00	26.00
Minimum value	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Maximum value	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00
20th percentile	19.60	15.60	19.80	21.00	17.00	13.20	19.00	22.00
10th percentile	16.60	12.30	15.80	16.00	9.40	9.00	14.90	16.10
<b>5th percentile</b>	<b>9.80</b>	<b>9.15</b>	<b>10.45</b>	<b>12.50</b>	<b>7.10</b>	<b>7.30</b>	<b>11.35</b>	<b>15.00</b>
Skewness statistic	-1.50	-0.59	-1.31	-1.61	-1.22	-0.81	-1.31	-1.68
Std. error	.32	.27	.23	.19	.31	.26	.23	.19
Kurtosis statistic	2.47	-0.55	1.24	2.10	0.39	-0.61	1.20	2.58
Std. error	.62	.53	.46	.37	.60	.52	.46	.37
<b>The average value of the scale items</b>	<b>3.23</b>	<b>2.95</b>	<b>3.30</b>	<b>3.44</b>	<b>3.19</b>	<b>2.95</b>	<b>3.26</b>	<b>3.45</b>
20th percentile of the average value of the scale item	2.80	2.23	2.83	3.00	2.43	<b>1.89</b>	2.71	3.14
10th percentile of the average value of the scale item	2.37	<b>1.76</b>	2.26	2.29	<b>1.34</b>	<b>1.29</b>	2.13	2.30
<b>5th percentile of the average value of the scale item</b>	<b>1.40</b>	<b>1.31</b>	<b>1.49</b>	<b>1.79</b>	<b>1.01</b>	<b>1.04</b>	<b>1.62</b>	<b>2.14</b>

Average item scores for the Receptive Language scale from the parents' surveys ranged between 2.95 and 3.44, and for the Expressive Language scale, between 2.95 and 3.45 (Table 1). However, these average scores cannot be directly compared across age groups due to slight content variations between item sets. A risk for a language development disorder was determined when a child's total score on the expressive or receptive language scale was at or below the 5th percentile, or when the average value of the scale items equated to the 5th percentile, indicative of the child "rarely" or "never" demonstrating the assessed language skills. According to parent surveys, the risk threshold for receptive language disorders in children aged 3 to 6 corresponded to the 5th percentile

values of 1.40, 1.31, 1.49, and 1.79, respectively. The 5th percentile risk scores for expressive language disorders were 1.01, 1.04, 1.62, and 2.14 (Table 1). Notably, more than five percent of children fell below the defined criteria for sufficient language development; for instance, the 10th percentile for receptive language at age 4 was 1.76, and for expressive language, the 10th percentile at age 3 was 1.34, and the 20th percentile at age 4 was 1.89. These scores indicate that certain expressive or receptive language skills were manifested only "rarely" or not at all ("never"). The figures suggest the unique characteristics of each age group sample and a relatively higher difficulty level of the individual items for the given ages.

*Table 2 Statistical indicators of the Expressive and Receptive Language Scales obtained from the BAASIK Teachers' survey and paired sample statistics for parents' and teachers' rating scales (made by authors)*

Statistical indicator	Receptive Language Scale				Expressive Language Scale			
	3 years	4 years	5 years	6 years	3 years	4 years	5 years	6 years
N	60	79	106	164	61	83	107	164
Scale mean ( <i>M</i> )	18.60	18.19	20.89	21.98	19.97	18.78	20.09	22.50
Standard deviation ( <i>SD</i> )	5.55	6.96	5.96	5.74	7.06	7.28	6.57	5.88
Median ( <i>Me</i> )	19.00	21.00	23.00	24.00	22.00	22.00	21.00	25.00
Minimum value	8.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Maximum value	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00
20th percentile	13.00	10.00	14.00	17.00	11.40	9.60	14.00	18.00
10th percentile	10.10	8.00	11.00	13.50	7.00	7.00	9.00	12.00
<b>5th percentile</b>	9.00	8.00	8.35	9.25	7.00	7.00	8.00	8.25
Skewness statistic	-0.21	-0.31	-0.87	-0.95	-0.73	-0.55	-0.58	-1.21
Std. error	.31	.27	.23	.19	.31	.26	.23	.19
Kurtosis statistic	-1.07	-1.41	-0.38	0.02	-0.80	-1.22	-0.88	0.49
Std. error	.61	.53	.47	.38	.60	.52	.46	.38
<b>The average value of the scale items</b>	<b>2.66</b>	<b>2.60</b>	<b>2.98</b>	<b>3.14</b>	<b>2.85</b>	<b>2.68</b>	<b>2.87</b>	<b>3.21</b>
20th percentile of the average value of the scale item	<b>1.86</b>	<b>1.43</b>	2.00	2.43	<b>1.63</b>	<b>1.37</b>	2.00	2.57
10th percentile of the average value of the scale item	<b>1.44</b>	<b>1.14</b>	<b>1.57</b>	<b>1.93</b>	<b>1.00</b>	<b>1.00</b>	<b>1.29</b>	<b>1.71</b>
<b>5th percentile of the average value of the scale item</b>	<b>1.29</b>	<b>1.14</b>	<b>1.19</b>	<b>1.32</b>	<b>1.00</b>	<b>1.00</b>	<b>1.14</b>	<b>1.18</b>
Paired samples t-test	4.87	3.21	3.82	5.34	3.22	3.75	4.87	3.77
<i>p</i>	< .001	< .002	< .001	< .001	< .002	< .001	< .001	< .001

The analysis of teachers' surveys showed that the average values for the Receptive Language scale items varied across age groups from 2.60 to 3.14, and for the Expressive Language scale, from 2.68 to 3.21 (Table 2). The survey results indicated a developmental risk for receptive language in three-year-old children at the 20th percentile with a score of 1.86, meeting the "never" or "rarely" criterion, with corresponding scores for four-year-olds at 1.44 (20th percentile), five-year-olds at 1.57 (10th percentile), and six-year-olds at 1.93 (10th percentile).

Three- and four-year-old children who demonstrate an average Expressive Language scale item score of 1.00 at the 5th and 10th percentiles attained scores of only 1.63 and 1.37, respectively, at the 20th percentile. Five-year-olds exhibited developmental risk at scores of 1.29 (10th percentile) and 1.14 (5th percentile), while for six-year-olds, the corresponding risk scores were 1.71 (10th percentile) and 1.18 (5th percentile).

A paired t-test was used to compare the mean values of the Receptive Language and Expressive Language scales from the Parents' and Teachers' surveys. The comparison revealed that parents' average scores across all age groups were statistically significantly higher than those given by teachers ( $p < .002$ ) (Table 2).

Spearman's rank correlation coefficient was employed to assess the relationship between parents' and teachers' ratings of children's language skills. Statistically significant ( $p < .001$ ) moderate to strong correlations were found between parents and teachers ratings of children receptive language ( $r_{S\_3y} = .43, p = .002; r_{S\_4y} = .61; r_{S\_5y} = .53; r_{S\_6y} = .51$ ) and expressive language ( $r_{S\_3y} = .60; r_{S\_4y} = .64; r_{S\_5y} = .59; r_{S\_6y} = .54$ ).

A moderate positive correlation was found between the scores given by parents and teachers on the Receptive and Expressive Language scale for 3-year-old children. For children aged 4 to 6, there were strong correlations between the receptive and expressive language scores provided by both parents and teachers (Figure 1). All of these correlations were statistically significant ( $p < .001$ ).

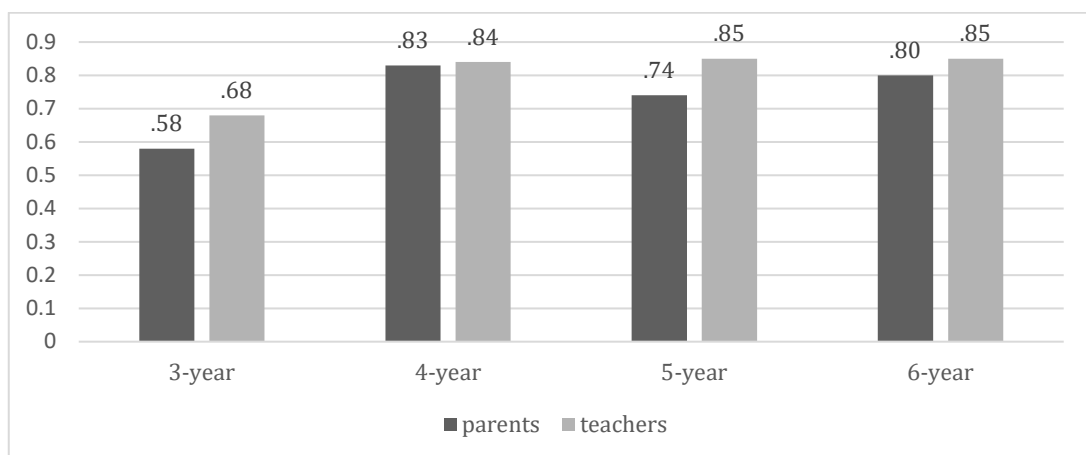


Figure 1 Spearman's correlations between scores of Expressive and Receptive Language Scales in Parents' and Teachers' survey forms for children in 3 to 6 years old groups (made by authors)

## **Discussion and conclusions**

A high Cronbach's alpha for the BAASIK Expressive and Receptive Language Scales across all age groups indicates strong internal consistency, suggesting that these scales provide reliable measurements with little variance due to measurement error (Pring, 2005).

In this study, both preschool teachers and parents evaluated children's language skills using the same items. Results showed that parents consistently rated their children's expressive and receptive language skills higher than teachers, particularly in 3- and 5-year-old children, with these differences being statistically significant. This variation in ratings between parents and teachers may be attributed to their differing experiences; teachers compare a child's language proficiency against a broad range of peers, whereas parents might not have such extensive comparative opportunities and may overestimate their children's abilities (Hauerwas & Stone, 2000; Vulane, Taurina, Zirina, 2016).

Correlation analyses revealed moderate agreement between teachers' and parents' ratings for children's receptive and expressive language skills, supporting the validity of the ratings. However, environmental factors, such as the distinct home and kindergarten settings, might explain why the correlations are not stronger. Furthermore, parents' and teachers' interpretations and potential biases may affect the agreement (Bishop & McDonalds, 2009).

The BAASIK scales' items were developed based on developmental milestones, with scores ranging from 1 to 4 points. The use of a percentile scale to identify developmental risks resulted in considerable heterogeneity in the 5th percentile values across different scales, indicating that skills at this percentile were either not mastered or "rarely" manifested. The difficulty indices for some items also showed low average levels at the 20th and 10th percentiles, suggesting that creating milestone-based items with a specific average difficulty range is challenging. Further discussion on the appropriateness of these items for children's developmental stages in contemporary society is warranted.

The study found that correlations for the Expressive Language Scale were higher than those for the Receptive Language Scale in 3-year-old children, likely due to the more observable nature of expressive language skills. This aligns with McLeod et al. (2017), who found stronger correlations for expressive than receptive language. The study also demonstrated that the associations between receptive and expressive language scores strengthen with children's age, validating the relationship between parents' and teachers' ratings and their predictive value (Sattler, 1992).

Hence, parents' questionnaires could be valuable for screening and early identification of language development issues, facilitating timely intervention. Similarly, a quick screening tool for preschool teachers can effectively monitor language development.

Nonetheless, this study has limitations, including a non-random sample and potential participation bias due to the online survey format. Future papers will continue to analyze BAASIK data.

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# VĀRDU ĶĒŽU TESTA NORMATĪVU IZVEIDE 1.-9. KLASES SKOLĒNIEM

## *The The Word Chain Test: the Normative Data for Students from Grades 1 to 9*

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**Abstract.** *The Word Chain Test (WCT) is a rapid screening procedure that appears to identify primary and secondary school students with poor silent word decoding abilities. The WCT was adapted to the Latvian language in 2003. However, norms for the test had yet to be established. The study is aimed to develop the WCT normative data set for students from grades 1 to 9. Students from grades 1 to 9 (N = 4476) representing all geographical regions of Latvia, urban and country territories completed the WCT that included two subtests – letter chains and word chains. The descriptive statistic parameters were estimated for each grade. The results demonstrated statistically significant correlations between scores of word and letter chains and the age of students. The statistically significant differences in the average scores of letter and word chains were found between boys and girls. The scores of letter and word chains were scaled separately for boys and girls by grade using a standard nine-point scale. The 5th, 7th, and 16th percentiles were estimated for diagnostic purposes. The developed WCT normative data set allows the examiner to assess students' visual-spatial and word-decoding skills. Future studies should continue the standardization procedures by determining the convergent and clinical validity of the WCT.*

**Keywords:** *dyslexia, normative data, reading disorders, screening, visual-spatial functions, Word Chain Test, word decoding*

### **Ievads**

### **Introduction**

Vārdu ķēžu tests ir ātrs un vienkāršs, grupā piedāvājams skrīninga instruments, kas ticami identificē sākumskolas un pamatskolas skolēnus ar sliktām vārdu atkodēšanas spējām, lasot klusi pie sevis, kā arī sniedz informāciju par vizuāli motoriem un fonoloģiskiem komponentiem (Scorza, Benassi, Boni, & Stella, 2019).

Fonoloģiskās prasmes ir spēja uztvert un atšķirt valodas skaņu sistēmu, saprast tās skanisko elementu funkcijas, darboties ar tām. Fonoloģiskās sistēmas mazākā vienība ir fonēma (Alm, 2004; Famula-Jurczak, & Perzanowska, 2023).

Rakstu valodā fonoloģiskās prasmes izpaužas spējā burtu atkodēt kā valodas skaņu. Vārdu atkodēšanas grūtības ir viena no būtiskajām specifisko lasīšanas traucējumu vai attīstības disleksijas problēmām. Atkodēšanas prasme attīstības disleksijas gadījumā ir nepietiekama prasme lasīšanas procesā saprast burtu kombinācijas kā vārdus. Lasītājam tie ir tikai burti un neveidojas attiecīgie jēdzieni un priekšstati par priekšmetiem, lietām, notikumiem. Dzirdot vārdu, burtu kombinācija iegūst jēgu (Alm, 2004; Dimitra, 2023; Mattson, Fischbein, & Roll-Pettersson, 2010).

K.Jakobsons runā par vizuāli motorām prasmēm (Jacobson, 1995), kas nepieciešamas burtu ķēžu testa veikšanai. Vizuāli motorā integrācija ir sarežģīts prasmju kopums, kas ietver daudzas pamata prasmes, piemēram, vizuālo uztveri, motoro vadību un acu-rokas koordināciju. Vienkārši sakot, tas attiecas uz spēju pārvērst vizuālo attēlu vai vizuālo plānu precīzā motorā darbībā. Vizuālā informācija tiek interpretēta un notiek atbilde ar motoru reakciju. Bērniem, kuriem ir redzes un motorikas integrācijas deficīts, var būt problēmas dažādās jomās, tai skaitā lasīšanā un motoro uzdevumu izpildes ātrumā (Zhang et al, 2023).

Specifiskos lasīšanas traucējumus zinātnieki pēta jau sen, un arī dažos pēdējo gadu pētījumos tiek akcentēta šo traucējumu ciešā saikne ar zināmām grūtībām mācību procesā visā skolas laikā (Famula-Jurczak & Perzanowska, 2023) un arī turpmākajā dzīvē (Dimitra, 2023). Traucējuma novēlota atklāšana mazina iespējas efektīvi palīdzēt bērnam, jo agrīnās riska pazīmes ir vērojamas jau pirmsskolas vecumā. Tā kā korekta attīstības disleksijas diagnostika nosaka to, ka pārbaudāmajam skolēnam ir jābūt apguvušam lasītprasmi (Jacobson, 1995), tad uzmanība tiek pievērsta jau skolas vecuma bērniem. Burtu un vārdu ķēžu testa izmantošana ļautu savlaicīgi konstatēt problēmu un uzsākt pedagoģisko atbalstu mācību procesā. Atzinīgi testu vērtē itāļu kolēģi, kas to izmanto jau vairāk kā 10 gadus (Scorza et al., 2015), uzsverot tā efektivitāti un izmantošanas priekšrocības. Zviedrijā testu izmanto plaši (Mattson, et al., 2010), veicot longitudinālus pētījumus un izmantojot vairākkārtējus mērījumus. Salīdzinot iegūtos rezultātus, var spriest arī par izvēlēto intervences metožu efektivitāti. Tas varētu būt nākamais solis pēc kvantitatīvo normu izstrādes. Latvijā testu var izmantot plaši, jo to var izmantot ne tikai logopēdi, bet arī skolotāji, tādēļ ir nepieciešamas kvantitatīvās normas.

Pētījuma mērķis: izstrādāt Vārda ķēžu testa kvantitatīvās normas 1. -9.klašu skolēniem.

## **Metodoloģija** *Material and methods*

Pētījuma veikšanai tika izmantots modificēts Vārdu ķēžu tests (Jacobson, 1997), kura adaptācija latviešu valodā bija veikta 2003. gadā. Tests sastāvēja no

divām daļām. Pirmo daļu veidoja 60 burtu ķēdes (BĶ), kur katrā ķēdē bija deviņi burti, no kuriem divi burti bija pa pāriem (piem., PRAAISHHE, RJVVIOOĀK). Burtu ķēžu uzdevums pārbauda vizuāli motorās funkcijas. Otrā daļā bija 60 vārdu ķēdes (VĶ), kuras veidoja trīs kopā sarakstīti vārdi (piem. *lielsircelties, baltapelepie, gājamanpriedes, artukšazābaciņi*). Vārdu ķēdes iekļāva bērniem pazīstamus lietvārdus, darbības vārdus, apstākļa vārdus. Vārdu ķēžu tests pārbauda vārdu atkodēšanas vai vārdu atpazīšanas spējas. Vārdu ķēžu testa izpildes ātrums atspoguļo vārdu atkodēšanas spējas attīstības līmeni (Jacobson, 1995). Testa rezultāts ietver pareizi aizpildīto burtu un vārdu ķēžu skaitu. Tā kā vārdu ķēžu uzdevumi pārbauda tikai vārdu atkodēšanas spēju, tad tajos netiek ņemti vērā valodas gramatiskie un semantiskie aspekti.

Latvijas Logopēdu asociācija 2022.gadā uzaicināja skolu logopēdus brīvprātīgi iesaistīties Vārdu ķēžu testa (šeit un turpmāk ar to tiek domātas abas tā daļas) standartizācijā. Aicinājumam atsaucās 66 logopēdi no dažādiem Latvijas reģioniem. Visi datu vācēji tika apmācīti testa veikšanas procedūrai un iegūto datu protokolēšanai īpaši izveidotās formās. Otro līdz devīto klašu skolēniem pārbaudes tika organizētas 2022.gada oktobrī un novembrī. Pirmo klašu skolēniem – 2023.gada februārī un martā, jo rudenī pirmo klašu skolēni vēl apgūst lasītprasmi. Datu vācējam Vārdu ķēžu tests tika piedāvāts visiem vienas klases skolēniem pirmās vai otrās stundas laikā. Sadarbībā ar klases audzinātāju, datu vācējs ieguva informāciju par bērna vecumu, attīstības traucējumiem (runas un valodas traucējumi, dzirdes traucējumi, mācīšanās traucējumi, redzes traucējumi, garīgās veselības un attīstības traucējumiem u.c.), valodu lietojumu ikdienā (viena vai vairākas). Standartizācijas datu kopā netika iekļautas atbildes, kuras iesniedza skolēni, kuri mācās Speciālās izglītības programmā izglītojamiem ar redzes traucējumiem (kods ...51), Speciālās izglītības programmā izglītojamiem ar garīgās veselības traucējumiem (...57), Speciālās izglītības programmā izglītojamiem ar garīgās attīstības traucējumiem (...58) un Speciālās izglītības programmā izglītojamiem ar smagiem garīgās attīstības traucējumiem un vairākiem smagiem attīstības traucējumiem (...59).

Vārdu ķēžu testu kopumā aizpildīja 4476 skolēni no 1. līdz 9.klasei, 2252 zēni un 2224 meitenes. Visvairāk aizpildītu Vārdu ķēžu testa rezultātu tika saņemts no Vidzemes (n = 1822; 41%) un Kurzemes (n = 1604; 36%), tad Rīgas (n = 504; 11%), Zemgales (n = 357; 8%) un Latgales (n = 189; 4%). Nepieciešamais respondentu skaits katrā klašu grupā tika aprēķināts, izmantojot Centrālās statistikas pārvaldes datus par izglītojamo skaitu vispārizglītojošās dienas skolās 2022. gada septembrī. Pētījumā iekļauto skolēnu sadalījums pa klašu grupām attiecībā pret izglītojamo skaitu vispārizglītojošās dienas skolās pa klasēm 2022./2023. mācību gada sākumā (CSP, 2022) ir atspoguļots 1. tabulā.

1.tabula. *Izglītojamo skaits vispārīzglītojošās dienas skolās pa klasēm 2022. gada septembrī un pētījumā iekļauto skolēnu skaits (autoru veidots)*

Table 1 *The number of students in comprehensive schools per class in September 2022 and the number of students included in the study (made by authors)*

	Kopā	Klase								
		1.	2.	3.	4.	5.	6.	7.	8.	9.
Ģk_Zēni_Meitenes	183229	22050	21318	20273	19804	18796	18751	20245	21326	20666
NZēni Meitenes	384	378	378	378	377	377	377	378	378	378
%Zēni,Meitenes	2.4%	3.5%	4.6%	3.9%	3.0%	1.5%	1.8%	1.3%	1.2%	1.1%
ĢkZēni	94244	11475	11028	10278	10210	9667	9775	10367	10886	10558
NZēni	383	372	372	371	371	370	370	371	372	371
%Zēni	2.4%	3.6%	4.3%	3.7%	2.8%	1.4%	1.9%	1.3%	1.2%	0.9%
ĢkMeitenes	88985	10575	10290	9995	9594	9129	8976	9878	10440	10108
NMeitenes	383	371	371	370	370	369	369	370	371	371
%Meitenes	2.5%	3.4%	4.8%	4.0%	3.1%	1.5%	1.7%	1.3%	1.2%	1.3%
Pavisam pētījumā	4476	773	971	783	586	273	340	265	257	228
Zēni	2252	416	474	384	287	137	183	137	134	100
Meitenes	2224	357	497	399	299	136	157	128	123	128

Ģk - Ģenerālkopa, skolēnu skaits pa klašu grupām (CSP, 2022)

N, % – aprēķinātais nepieciešamais izlases lielums

Pētījuma gaitā skolēniem tika izdalītas Vārdu ķēžu testa abas daļas. Pirms testa veikšanas skolēni tika iepazīstināti ar uzdevumu veikšanas norādījumiem un aizpildīja četras burtu un četras vārdu ķēdes treniņa nolūkos, lai pārlicinātos, ka veicamais uzdevums ir saprotams. Burtu ķēžu uzdevumā skolēniem bija jāatrod divi vienādi burtu pāri katrā no burtu virknēm un starp tiem jānovelk svītra (piem., PRA/AISH/HE). Burtu ķēžu aizpildīšanai tika atvēlētas 90 sekundes. Vārdu ķēžu uzdevumā skolēniem 180 sekunžu vai 3 minūšu laikā bija jāatdala pēc iespējas vairāk kopā sarakstītie vārdi, novelkot starp tiem svītru (piem., *liels/ir/celties*). Skolēniem tika norādīts, ka jācenšas aizpildīt pēc iespējas vairāk ķēžu, tādējādi mudinot viņus strādāt ātri. Iepazīstinot skolēnus ar Vārdu ķēžu testa uzdevumiem, datu vācēji izmantoja standartizētas instrukcijas.

## Rezultāti Results

Analizējot rezultātus, tika aprēķinātās Burtu ķēžu un Vārdu ķēžu vidējās vērtības (M), standarta novirzes (SD), vērtību diapazons (min, max), katrā klašu grupā (2. tab.). Asimetrijas koeficients norādīja, ka burtu ķēžu rezultāti 2. un 4. klasē bija atbilstoši normālsadalījumam. Pārējās klasēs bija vērojama vairāk vai mazāk izteikta negatīva asimetrija, kas norādīja, ka burtu ķēdēs bija vairāk rezultātu ar augstākām vērtībām. Vārdu ķēdēm aprēķinātie asimetrijas un

ekscesa koeficienti, liecināja, ka visās klasēs, izņemot pirmo, rezultāti bija atbilstoši normālam datu sadalījumam. Pirmajā klasē lielākajai daļai skolēnu bija zems pareizi izpildīto vārdu ķēžu skaits.

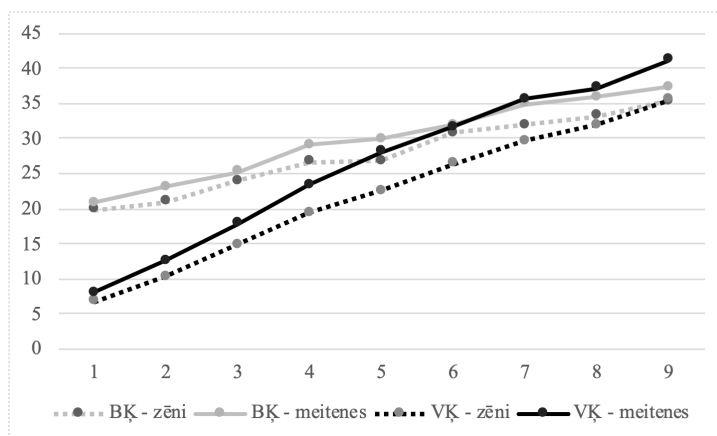
*2.tabula. Statistiskie rādītāji pareizi aizpildītām burtu un vārdu ķēdēm pa klašu grupām (autoru veidots)*

*Table 2 Statistic indicators for correctly completed letter and word chains by grades (made by authors)*

Klase	1.	2.	3.	4.	5.	6.	7.	8.	9.
N	773	971	783	586	273	340	265	257	228
B $\bar{K}$ _M	20.27	22.09	24.61	27.8	28.38	31.28	33.3	34.47	36.4
B $\bar{K}$ _SD	6.24	6.66	8.03	8.68	8.98	8.65	9.52	10.97	8.65
B $\bar{K}$ _min	0	0	0	0	0	0	0	0	0
B $\bar{K}$ _max	43	49	56	60	60	60	55	60	60
B $\bar{K}$ _A	-0.69	-0.5	-0.62	0.32	-0.57	-1.06	-1.31	-0.90	-1.06
B $\bar{K}$ _SE <sub>A</sub>	.09	.08	.09	.10	.15	.13	.15	.15	.16
B $\bar{K}$ _E	1.54	1.45	1.88	1.9	2.92	3.05	2.60	1.20	3.68
B $\bar{K}$ _SE <sub>E</sub>	.18	.16	.18	.20	.29	.26	.30	.30	.32
V $\bar{K}$ _M	7.33	11.46	16.4	21.41	25.24	28.7	32.44	34.42	38.58
V $\bar{K}$ _SD	6.18	7.39	8.51	9.18	9.94	10.29	10.54	11.77	12.49
V $\bar{K}$ _min	0	0	0	0	4	2	0	0	3
V $\bar{K}$ _max	36	45	49	49	60	59	60	60	60
V $\bar{K}$ _A	1.1	0.68	0.4	0.08	0.28	0.14	0.12	-0.16	-0.05
V $\bar{K}$ _SE <sub>A</sub>	.09	.08	.09	.10	.15	.13	.15	.15	.16
V $\bar{K}$ _E	1.58	0.37	0.07	-0.32	0.14	-0.2	0.70	-0.12	-0.74
V $\bar{K}$ _SE <sub>E</sub>	.18	.16	.18	.20	.29	.26	.30	.30	.32

*B $\bar{K}$  – burtu ķēdes, V $\bar{K}$  – vārdu ķēdes, M - vidējā vērtība; SD - standarta kļūda; min, max - minimālā un maksimālā vērtība; A – asimetrijas koeficients, SE<sub>A</sub> – asimetrijas koeficienta standartkļūda; E – ekscesa koeficients, SE<sub>E</sub> – ekscesa koeficienta standartkļūda.*

Salīdzinot burtu un vārdu ķēžu vidējās vērtības pa klašu grupām, varēja novērot vizuāli motoro funkciju un vārdu atkodēšanas un atpazīšanas spēju pieaugumu saistībā ar izglītībā pavadītiem gadiem (1. att.). Statistiski nozīmīgas korelācijas tika novērotas starp skolēnu vecumu un pareizi aizpildītām burtu ķēdēm ( $r = .500, p < .001$ ) un pareizi aizpildītām vārdu ķēdēm ( $r = .694, p < .001$ ).



1.attēls. *Burtu un vārdu ķēžu vidējās vērtības zēniem un meitenēm pa klašu grupām (autoru veidots)*

Figure 1 *Mean scores of letter and word chains for boys and girls by grades (made by authors)*

Lai noteiktu atšķirības starp BĶ un VĶ vidējām vērtībām zēnu un meiteņu izlasēs, tika izmantots t-tests. Datu analīze norādīja uz statistiski nozīmīgām atšķirībām starp abiem dzimumiem vārdu ķēžu vidējos rezultātos visās klašu grupās (3. tab.). Statistiski nozīmīgas atšķirības starp dzimumiem tika novērotas arī burtu ķēžu vidējos rezultātos, izņemot 6. un 9. klases, kur skolēniem burtu ķēžu vidējās vērtības neatšķīrās meiteņu un zēnu izlasē.

3.tabula. *Vārdu ķēžu vidējās vērtības zēniem un meitenēm visās klašu grupās (autoru veidota)*

Table 3 *The mean scores of the Word Chains for boys and girls by grades (made by authors)*

Klase	Zēni			Meitenes			t	p
	N	M	SD	N	M	SD		
1.	416	6.70	5.92	357	8.06	6.39	-3.073	.002
2.	474	10.28	7.36	497	12.58	7.25	-4.913	< .001
3.	384	14.89	8.26	399	17.86	8.49	-4.960	< .001
4.	287	19.40	8.42	299	23.34	9.47	-5.320	< .001
5.	137	22.44	9.83	136	28.07	9.26	-4.869	< .001
6.	183	26.28	9.52	157	31.52	10.47	-4.830	< .001
7.	137	29.55	9.41	128	35.54	10.83	-4.816	< .001
8.	134	31.94	11.61	123	37.11	11.39	-3.601	< .001
9.	100	35.40	11.86	128	41.07	12.45	-3.484	.001

Visu burtu un vārdu ķēžu rezultātu standartizācijai tika izmantotas z-vērtības un tika veikta to mērogošana deviņu punktu skalā (*STANDARD NINE*). Sakarā ar to, ka BĶ un VĶ vidējie rezultāti statistiski nozīmīgi atšķīrās starp dzimumiem visās klašu grupās, aprēķini tika veikti zēniem un meitenēm

atsevišķi. Burtu un vārdu ķēžu kvantitatīvās normas, atbilstoši standartizētai deviņu punktu skalai, ir norādītas 4. un 5. tabulā.

**4.tabula. Burtu ķēžu (BK) un vārdu ķēžu (VK) rezultātu sadalījums standartizētā deviņu punktu skalā zēniem pa klašu grupām (autoru veidota)**

**Table 4 Distribution of the Letter Chains and Word Chains scores on the nine-point standard scale for boys by grades (made by authors)**

Stanine		1	2	3	4	5	6	7	8	9
Procenti no visiem rezultātiem		4%	7%	12%	17%	20%	17%	12%	7%	4%
1.	BK	0-8	9-11	12-15	16-18	19-21	22-24	25-27	28-30	31-60
	VK	0-2			3-5	6-8	9-11	12-14	15-17	18-60
2.	BK	0-9	10-12	13-16	17-19	20-22	23-25	26-29	30-32	33-60
	VK	0-1		2-4	5-8	9-12	13-15	16-19	20-23	24-60
3.	BK	0-9	10-13	14-17	18-21	22-25	26-30	31-34	35-38	39-60
	VK	0	1-4	5-8	9-12	13-16	17-21	22-25	26-29	30-60
4.	BK	0-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	41-60
	VK	0-4	5-8	9-13	14-17	18-21	22-25	26-29	30-34	35-60
5.	BK	0-8	9-14	15-19	20-24	25-29	30-33	34-38	39-40	41-60
	VK	0-5	6-10	11-15	16-19	20-24	25-29	30-34	35-39	40-60
6.	BK	0-13	14-19	20-24	25-28	29-33	34-37	38-41	42-46	47-60
	VK	0-9	10-14	15-19	20-23	24-28	29-33	34-38	39-42	43-60
7.	BK	0-12	13-19	20-23	24-29	30-34	35-39	40-44	45-49	50-60
	VK	0-13	14-17	18-22	23-27	28-31	32-36	37-41	42-46	47-60
8.	BK	0-14	15-20	21-26	27-31	32-37	38-42	43-48	49-52	53-60
	VK	0-13	14-19	20-25	26-31	32-37	38-43	44-48	49-54	55-60
9.	BK	0-19	20-24	25-28	29-33	34-37	38-41	42-46	47-49	50-60
	VK	0-14	15-20	21-25	26-32	33-38	39-44	45-50	51-56	57-60

**5.tabula. Burtu ķēžu (BK) un vārdu ķēžu (VK) rezultātu sadalījums standartizētā deviņu punktu skalā meitenēm pa klašu grupām (autoru veidota)**

**Table 5 Distribution of the Letter Chains and Word Chains scores on the nine-point standard scale for girls by grades (made by authors)**

Stanine		1	2	3	4	5	6	7	8	9
Procenti no visiem rezultātiem		4%	7%	12%	17%	20%	17%	12%	7%	4%
1.	BK	0-10	11-13	14-16	17-19	20-22	23-25	26-28	29-31	32-60
	VK	0		1-3	4-6	7-9	10-12	13-16	17-19	20-60
2.	BK	0-11	12-14	15-18	19-21	22-24	25-28	29-31	32-34	35-60
	VK	0-3		4-7	8-10	11-14	15-18	19-21	22-25	26-60
3.	BK	0-11	12-15	16-19	20-23	24-27	28-31	32-35	36-38	39-60
	VK	0-2	3-7	8-11	12-15	16-19	20-24	25-28	29-32	33-60
4.	BK	0-13	14-17	18-22	23-26	27-31	32-35	36-40	41-44	45-60
	VK	0-6	7-11	12-16	17-20	21-25	26-30	31-35	36-39	40-60
5.	BK	0-12	13-18	19-23	24-27	28-31	32-36	37-40	41-44	45-60

	VĶ	5-11	12-16	17-21	22-25	26-30	31-35	36-39	40-44	45-60
6.	BĶ	0-15	16-21	22-25	26-29	30-33	34-38	39-42	43-46	47-60
	VĶ	0-13	14-18	19-23	24-28	29-34	35-39	40-44	45-49	50-60
7.	BĶ	0-18	19-23	24-28	29-32	33-37	38-41	42-45	46-49	50-60
	VĶ	0-15	16-22	23-27	28-32	33-38	39-43	44-49	50-56	57-60
8.	BĶ	0-12	13-18	19-24	25-30	31-36	37-41	42-47	48-52	53-60
	VĶ	0-10	11-17	18-23	24-29	30-34	35-40	41-46	47-52	53-60
9.	BĶ	0-22	23-26	27-30	31-35	36-39	40-43	44-47	48-52	53-60
	VĶ	0-19	20-24	25-31	32-37	38-44	45-50	51-56	57-60	

Vārdu ķēžu testa rezultāti norāda uz lasīšanas traucējumu un disleksijas risku, tāpēc tika aprēķināta vārdu atkodēšanas spēju atbilstība 5., 7., un 16. procentilei zēniem un meitenēm pa klašu grupām (6. tab.).

6.tabula. *Vārdu ķēžu rezultātu atbilstība 5., 7., 16. procentilei zēniem un meitenēm pa klašu grupām (autoru veidota)*

Table 6 *Concordance of the Word Chain scores at 5th, 7th, and 16th percentiles for boys and girls by grades (made by authors)*

Klase	Zēni			Meitenes		
	5. perc.	7. perc.	16. perc.	5. perc.	7. perc.	16. perc.
1.	0	0	1	0	0	1
2.	0	1	3	1	3	5
3.	2	3	7	4	5	9
4.	6	7	10	7	8	14
5.	7	9	12	12	16	20
6.	11	13	18	14	16	21
7.	16	17	21	17	21	27
8.	12	15	20	17	21	26
9.	15	19	24	19	20	27

### **Diskusija un secinājumi** *Discussion and conclusions*

Vārdu ķēžu testa standartizācijas izlase tika veidota tā, lai pēc iespējas precīzāk atspoguļotu ģenerālkopu (Latvijas 1. -9. klases skolēnus), kurā minētais instruments tiks izmantots. Izlasē tika iekļauti zēni un meitenes no 1. līdz 9. klasei no visiem Latvijas reģioniem, pilsētām un lauku apvidiem. Pētījumā iekļautās izlases atbilda tipiskas klases profilam, t.i., tajās bija monolingvāli un bilingvāli skolēni ar tipisku un traucētu valodas attīstību. Izlasē iekļauto skolēnu skaits 1., 2. un 3. klasē norāda, ka atbilstība attiecībā pret ģenerālkopu (CSP, 2022) ir ļoti laba, taču ceturtās klases izlasē iekļauto respondentu skaits nedaudz atpaliek no nepieciešamā. Savukārt, iegūtie rezultāti 5., 6., 7., 8. un 9. klašu grupās būtu jāinterpretē uzmanīgi, jo pētījuma izlašu lielums nebija pietiekams, lai precīzi pārstāvētu visu Latvijas skolēnu skaitu šajos vecuma posmos. Šajā



pētījumā klašu izlasēs iekļauto bērnu skaits (228-971) bija lielāks nekā Vārdu ķēžu testa standartizācijā zviedru valodā (150 bērni katrā klašu grupā, Jacobson, 1995) un itāļu valodā (109-198 bērni; Scorza et al., 2019).

*Vārdu ķēžu testa kvantitatīvās normas un to interpretācija.*

Pētījuma mērķis bija standartizēt Vārdu ķēžu testu latviešu valodā, izstrādājot katrai klašu grupai atbilstošas kvantitatīvās normas. Līdzīgi kā testa oriģinālajā versijā (Jacobson, 1995), vārdu un burtu ķēžu rezultātu apkopošanai tika izmantota standarta deviņu punktu skala (*stanine*). Standarta deviņu punktu metode ir ir plaši izmantota izglītībā, lai salīdzinātu skolēnu sasniegumus atbilstoši normālam sadalījumam. Burtu un vārdu ķēžu rezultāts, kas ir atbilstošs 4-6 punktu intervālam, norāda uz vidēju vizuāli motoro un vārdu atkodēšanas spēju līmeni, 1-3 punktiem atbilstošs rezultāts norāda uz sniegumu zem vidējā līmeņa, bet virs vidējā līmeņa esošs rezultāts ir atbilstošs 7-9 punktiem esošajā skalā. Iegūtā rezultāta atbilstība deviņiem punktiem (virs 96. procentiles) norāda uz ļoti augstu mērāmās pazīmes vērtējumu attiecībā pret references grupu un, savukārt, iegūtā vērtējuma atbilstība vienam punktam (zem 4. procentiles) norāda uz ļoti zemu sniegumu, salīdzinot ar vērtējumiem, kas iegūti tāda paša vecuma respondentiem.

Vārdu ķēžu tests tiek izmantots kā viens no disleksijas un lasīšanas traucējumu skrīninga instrumentiem (Jacobson, 1995; Alm, 2004; Scorza et al., 2019). Par bāzes robežvērtību, kas atdala indivīdus ar iespējamiem lasīšanas traucējumiem no tiem, kuriem šādu traucējumu varētu nebūt, tiek uzskatīta 16.procentile, jeb viena standartnovirze no vidējā rezultātā noteiktā vecuma grupā (Erbeli, Rice, Paracchini, 2021). Savukārt, 5. procentile norāda uz augstu noteikta attīstības parametra traucējuma risku, kas runājot VĶT kontekstā, varētu norādīt uz izteiktām vārdu atkodēšanas grūtībām, kas varētu būt raksturīgas disleksijas sindromam. Disleksijas pētījumos tiek norādīts, ka attīstības disleksija varētu būt indivīdiem, kuriem noteiktu spēju novērtējums atrodas 1,5 standartnoviržu attālumā un zemāk no vidējā lasīšanas mērījuma noteiktā vecumā (Wagner et al., 2020; Peterson & Pennington, 2012). Pusotra standartnovirze atbilst 7. procentilei.

Interpretējot iegūtos rezultātus, jāņem vērā, ka skolēniem, kuru vērtējums vārdu ķēžu uzdevumā atbilst 1-3 punktiem *stanine* skalā, bet burtu ķēžu uzdevumā ir atbilstošs 4-7 punktiem, pastāv lasīšanas traucējumu un disleksijas risks (Jacobson, 1995). Vārdu atkodēšanas grūtības ir viena no disleksijas raksturīgākām pazīmēm (Peterson & Pennington, 2012). Zviedrijā disleksija tika atklāta 8% bērnu, kuru vārdu ķēžu vērtējums bija zemākā rezultāta (1-3) robežās (Alm, 2004). Tajā pašā laikā ir iespējami gadījumi, kad indivīdiem ar disleksiju ir zems vērtējums ne tikai vārdu ķēdēs, bet arī burtu ķēdēs (Jacobson, 1995), kā arī indivīdi ar disleksiju var būt "atrodami" lasīšanas spēju spektra jebkurā punktā (Wagner et al., 2020). Tāpēc bērnus, kuru Vārdu ķēžu testa vērtējums atrodas trešajā *stanine* skalā vai ir zem 16. procentiles ir nepieciešams

nosūtīt pie logopēda, lai veiktu padziļinātu mutvārdu un rakstu valodas pārbaudi. Vārdu ķēžu testa rezultāts bez papildus izmeklējumiem nesniedz nepieciešamos pierādījumus disleksiju vai lasīšanas traucējumu diagnozei. Turklāt, jāpiebilst, ka Vārdu ķēžu tests sniedz informāciju par lasīšanas tehnikai svarīgiem parametriem, taču nevērtē lasīšanas sapratni, bez kuras pilnvērtīgs lasīšanas spējas novērtējums nav iespējams.

Neskatoties uz to, ka Vārdu ķēžu tests pirmo klašu grupā tika veikts pavasarī (februāris, marts), 23% skolēnu demonstrēja ļoti zemu rezultātu vārdu ķēdēs, kas norāda, ka šajā vecumā varētu būt apgrūtināta disleksijas un lasīšanas traucējumu diferenciāldiagnostika. Lai arī vārdu atkodēšanas prasmes otrajā klasē uzlabojas, tomēr arī šajā vecumā, domājot par disleksijas diagnozi, būtu ļoti uzmanīgi jāinterpretē skrīninga testa un padziļinātas izmeklēšanas rezultāti. Pētījuma rezultāti norāda, ka lielam skaitam pirmās un otrās klases skolēnu ir vārdu atkodēšanas grūtības, kas būtiski varētu ietekmēt ne tikai lasītprasmi, bet arī izglītības programmas apguvi. Tāpēc būtu nepieciešams, nodrošināt sistemātisku pedagoģiskais atbalstu mācību procesā.

Salīdzinot vidējo pareizi izpildīto burtu un vārdu ķēžu skaitu latviešu un itāļu bērnu izlasēs (Scorza, et al., 2019) pa klašu grupām, redzams ka nav atšķirības burtu ķēžu rezultātos. Taču vārdu ķēdēs līdzīgus rezultātus demonstrē tikai 1. un 2. klases skolēni. Vidējais pareizi izpildīto vārdu ķēžu skaits latviešu valodā 1.klasē bija 7,33, itāļu valodā – 6,69, 2.klasē attiecīgi 11,46 un 12,49. Sākot no 3.klases, itāļu valodā administrētā vārdu ķēžu uzdevumā skolēni demonstrēja labākas vārdu atkodēšanas prasmes nekā skolēni Latvijā.

Pētījuma rezultātā izveidotās Vārdu ķēžu testa kvantitatīvās normas (4., 5.tabula) ļauj atklāt ne tikai skolēnus ar zemām vārdu atkodēšanas prasmēm (atbilstoši 1-3 punktiem *stanine* skalā), bet arī tos skolēnus, kuru sniegums ir virs vidējā līmeņa (virs 8 punktiem *stanine* skalā). Savlaicīgi nepamanot skolēnus ar labām lasīšanas prasmēm un nepiedāvājot viņu spējām atbilstošus mācību uzdevumus, pastāv neizmantota potenciāla risks. Līdzīgi kā skolēniem ar sliktu lasītprasmi arī talantīgiem bērniem ir nepieciešams individualizēts atbalsts, it īpaši sākumskolā. Vārdu ķēžu testa latviešu valodas versija iekļāva 60 vārdu ķēdes. Pētījuma rezultāti norādīja, ka esošais vārdu ķēžu skaits nespēj diferencēt skolēnus ar izcilām vārdu atkodēšanas prasmēm (virs 96.procentiles vai 9 punktiem *stanine* skalā) 9.klases meiteņu izlasē. Vārdu ķēžu testa zviedru valodas versijā ir 120 vārdu ķēdes.

#### *Vārdu ķēžu testa rezultāti un respondentu vecums.*

Līdzīgi kā Scorza et al. pētījumā, iegūtie rezultāti norādīja uz to, ka Vārdu ķēžu testa rezultāti ir saistīti ar bērnu vecumu vai izglītībā pavadīto laiku. Šo novērojumu var analizēt divos aspektos. Pirmkārt, skolēnam izglītības procesā pilnveidojas vārdu atkodēšanas prasmes, t.i., lasīšanas prasme automatizējas un bērniem kļūst aizvien vieglāk atpazīt uzrakstītos vārdus. Alms norāda, ka bērni ar labām lasīšanas prasmēm var izmantot “vidējā vārda” stratēģiju (Alm, 2004).

Viņi atpazīst vārdu ķēdes vidējo vārdu un atdala to no malējiem, pat neizlasot tos, tādējādi iegūstot augstāku rezultātu. Šādi riski testa administrēšanā varētu būt novērojami ceturtnās klases un vecākiem bērniem. Zviedru valodā ir pieejama jaunākas Vārdu ķēžu testa versijas (*Reading Chains*, Jacobson, 2001; *Reading Chains-2*, Jacobson, 2014), kurās šī problēma ir novērsta un vecākiem bērniem tiek pārbaudītas arī teikumu atkodēšanas prasmes. Taču no otras puses, ir jāatceras, ka Vārdu ķēžu tests ir skrīninga instruments, kā mērķis ir atklāt indivīdus ar lasīšanas traucējumu un disleksijas risku. Šajā gadījumā mēs varētu spekulēt, ka skolēniem ar lasīšanas traucējumiem atkodēšanas prasmes nav automatizētas tādā līmenī, lai triju kopā sarakstītu vārdu virknē varētu atpazīt vidējo vārdu.

Otrkārt, Vārdu ķēžu tests paredz uzdevumus veikt noteiktā laikā (90 sekundes BĶ, 180 sekundes VĶ) un labāks rezultāts vecākiem bērniem norāda, ka pieaug vizuālās informācijas apstrādes un pie sevis izlasītu vārdu atkodēšanas ātrums. Lasīšanā tas izpaužas kā raitāka lasīšana. Tomēr jāatceras, ka ne visos gadījumos Vārdu ķēžu testa izpildes ātrums ir saistīts ar vecumu. Zems rezultāts BĶ un VĶ uzdevumos varētu norādīt uz vispārēju lēnu informācijas apstrādi, kam par iemeslu var būt nenoturīga uzmanība, lēns darba temps, vizuālās uztveres vai smalkās motorikas problēmas un pazemināta interese pildīt piedāvāto testu (Jacobson, 1995; Alm, 2004).

*Vārdu ķēžu testa rezultāti un respondentu dzimums.*

Pētījumi norāda, ka lasīšanas traucējumi zēniem ir sastopami biežāk nekā meitenēm (Flannery, Liederman, Daly, Schultz, 2000) un zēniem vārdu atkodēšanas prasmes ir sliktāk attīstītas nekā tāda paša vecuma meitenēm (Verhoeven & van Leeuwe, 2011). Mūsu pētījuma rezultāti norādīja, ka meitenēm visās klašu grupās VĶ un BĶ bija augstāks vērtējums nekā zēniem. Līdzīgi rezultāti ir iegūti izmantojot Vārdu ķēžu testa zviedru valodas versiju (Jacobson, 1995; Tordön, Bladh, Svedin, Sydsjö, 2020). Tā, zviedru bērnu izlasē vidējais pareizi izpildīto vārdu ķēžu skaits 4. klases meitenēm bija tāds pats kā 5. klases zēniem un 6. klases meitenēm tāds pats kā 8. klases zēniem (Jacobson, 1995). Mūsu pētījuma rezultāti bija ļoti līdzīgi – vidējais vārdu ķēžu skaits 4. klases meitenēm bija 23,34 un 5. klases zēniem 22,44, 6. klases meitenēm 31,52 un 8. klases zēniem 31,94.

Vārdu ķēžu testa standartizācijas procedūra bija nepilnīga, jo neiekļāva retesta, konverģentās un klīniskās validitātes pārbaudes. Konverģentās validitātes pārbaudei būtu ieteicams Vārdu ķēžu testa rezultātus salīdzināt ar lasītprasmes novērtēšanas testa Acadience™ (DIBELS Next) rezultātiem. Savukārt, klīniskās validitātes pārbaudei būtu nepieciešams veikt Vārdu ķēžu testu skolēniem ar un bez lasīšanas traucējumiem. Katrai klašu grupai atbilstošu normatīvu izveide ir pirmais solis šī testa ieviešanai praksē.

Kamēr testa standartizācijas procedūra nav pilnībā pabeigta, šī pētījuma autori norāda, ka burtu ķēžu un vārdu ķēžu kvantitatīvās normas ļauj

pārbaudītājam novērtēt izglītojamā burtu uztverei nepieciešamās vizuāli motorās spējas un vārdu atkodēšanas prasmes, salīdzinot iegūtos rezultātus ar tāda paša vecuma references izlasi. Izmantojot šo testu frontālā pārbaudē kādā konkrētā klasē, pārbaudītājs var paredzēt iegūt līdzīgus rezultātus, kādi tika iegūti šajā pētījumā. Tajā pašā laikā, Vārdu ķēžu testu var izmantot arī individuālam skolēna novērtējumam, iegūtos rezultātus salīdzinot ar tāda paša vecuma bērnu sniegumu. Rūpīgi interpretējot iegūtos rezultātus, ievācot anamnēzes datus un papildinot tos ar citām mutvārdu un rakstu valodas pārbaudēm, logopēds var izdarīt secinājumu par lasīšanas funkcijas stāvokli, nepieciešamības gadījumā diagnosticējot lasīšanas traucējumus vai attīstības disleksiju.

### **Summary**

The Word Chains Test is a rapid and straightforward group-based screening tool that accurately identifies primary and elementary school students with poor word decoding abilities when reading silently, providing insights into visuospatial and phonological components (Scorza et al., 2019). Children with reading disorders and developmental dyslexia have word decoding difficulties. Specific reading disorders have been under investigation for an extended period, with recent studies highlighting their close association with learning difficulties throughout schooling (Famula-Jurczak & Perzanowska, 2023) and later in life (Dimitra, 2023). Late detection of the disorder diminishes the chances of effectively aiding the child.

The Word Chain test is focused on school-age children. Implementing the test could identify the problem early and initiate pedagogical support in the learning process. Italian colleagues, utilizing it for over ten years (Scorza et al., 2015), praise the test for its effectiveness and benefits. In Sweden, the test is extensively employed (Mattson et al., 2010) in longitudinal studies, utilizing multiple measures. Comparative analysis of results allows judgment of the effectiveness of the chosen intervention method, a potential step after developing quantitative norms.

The study aimed to establish quantitative norms for the Word Chains test for students in grades 1-9.

Material and methods.

The research employed a modified Word Chains test (Jacobson, 1997), adapted into Latvian in 2003 (Poļevska D., & Jacobson, C.). The test comprised two subtests: Letter Chains (LC) and Word Chains (WC). The LC subtest tested visual-motor functions, containing 60 chains with nine letters, including pairs (e.g., PRAAISHHE, RJVVIOOĀK). The WC subtest evaluated word decoding or recognition skills. The word chain consisted of three words written together, encompassing nouns, verbs, and adverbs familiar to children. The total number of word chains was 60. The Word Chains Test's performance speed reflects the

developmental level of word decoding ability (Jacobson, 1995), and the score includes the number of correctly completed chains.

In 2022, the Speech-Language Therapists Association of Latvia invited school speech therapists to participate voluntarily in standardizing the Word Chains test. Sixty-six speech therapists from various Latvian regions responded, and 4,476 students from grades 1 to 9 completed the test. The data from the Central Statistics Office on the number of students in general education day schools in September 2022 were used to estimate the study sample. Students from 1st to 9th grade from all regions, cities, and rural areas of Latvia were included in the sample. The study sample included monolingual students with typical language development, bilingual students, and students with speech and language disorders.

#### Results.

The results were analyzed, and average values, standard deviations, and the range of values were calculated for both subtests in each class group. We found that word decoding skills and visual perception function improved by the grade and age of respondents ( $r = .694$ ,  $p < .001$ ;  $r = .500$ ,  $p < .001$ ). The t-test demonstrated that the average scores of LC and WC were statistically significantly higher in girls than in boys across all grades. The scores of LC and WC were presented for each gender and grade separately using a stanine (STANDARD NINE) scale. Moreover, the values of the 5th, 7th, and 16th percentiles were estimated for boys and girls for each grade.

#### Discussion and conclusions.

The quantitative norms of the Word Chains test enable the detection of students with low word decoding skills (below the 16th percentile) and those performing above the average level (above the 84th percentile). Failing to identify students with good reading skills in time and not offering learning tasks appropriate to their abilities risks untapped potential. Like students with poor reading skills, gifted children also need individualized support, especially in primary school.

While the test standardization procedure still needs to be completed, the authors of this study indicate that the quantitative norms of both subtests allow the examiner to assess the students' visual-motor abilities and word-decoding skills by comparing the obtained results with a reference sample of the same age. By carefully interpreting the obtained results, collecting anamnesis data, and supplementing them with other oral and written language tests, the speech therapist can conclude the state of the reading function and, if necessary, diagnose reading disorders or developmental dyslexia.

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**MŪŽIZGLĪTĪBA**  
*Lifelong Learning*



# SUSTAINABILITY VALUES: A COMPREHENSIVE FRAMEWORK FOR ADULT EDUCATION

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**Abstract.** Sustainability means prioritising the needs of all life forms and of the planet by ensuring that human activity does not exceed planetary boundaries. Adult education plays an important role in empowering adult learners to foster sustainability and its values. Sustainability competence is guided by sustainability values. Competence is considered as an educational category, thereby adult education is aimed at infusing sustainability values into adult learning. However, sustainability values are an under-explored area in scientific literature. Only sustainability values for children have been listed. The aim of this research is to analyse sustainability values in scientific literature underpinning the creation of a framework of sustainability values to be embedded into adult education. The exploratory research is employed in this work as there is no well-defined framework of sustainability values. Scientific literature review as a method of investigation is deployed. Obtained data are processed via content analysis. A novel framework of inter-related sustainability values was created. The novel framework is based on the principles of interconnectedness and interdependency of sustainability values. The framework categorizes sustainability values from the external and internal perspectives. A new research question has been formulated: What are modern methods to foster adult learners' sustainability values?

**Keywords:** Adult education, external perspective, framework, internal perspective, sustainability, sustainability competence, sustainability values.

## **Introduction**

Sustainability is a response to the global pressing issue of the human impact on the environment (Griswold, 2016) and the Earth planet. Sustainability practice creates the tension between maintaining the status quo and changing our existing structures and relationships (Griswold, 2016). For the tension decrease, adult education plays an important role in empowering adult learners to foster sustainability and its values for promoting environmental, social and governance efficiency (Kwilinski, Lyulyov, & Pimonenko, 2023). Valuing sustainability guides the development of individuals' competences (OECD, 2019). Competence is considered as an educational category, thereby adult education aims at infusing sustainability values into adult learning for interdisciplinary problem solving (Walsh, Böhme, Lavelle, & Wamsler, 2020). However, sustainability values are an under-explored area in scientific literature.

The aim of this research is to analyse sustainability values in scientific literature underpinning the creation of a framework of sustainability values to be embedded into adult education.

The exploratory research is employed in this work as there is no well-defined framework of sustainability values. Scientific literature review as a method of investigation is deployed. The obtained data are processed via content analysis.

## **Research Methodology**

The methodological background of the present research implies the consideration of (OECD, 2019) the principles of

- Interconnectedness: Everything is connected, nothing is excluded, and everything is related.
- Interdependency: one phenomenon impacts the other existing or emerging phenomena.
- Everything in the universe is fluid and in motion.

The principles of interconnectedness, interdependency, and motion are reflected in the research methodology built as the system of external and internal perspectives (Zaščerinska, 2011). This methodology accentuates the existence of two perspectives – external and internal. The external perspective relates to the process, while the internal refers to the process results (Ahrens, Zascerinska, & Aleksejeva, 2021). The methodology proceeds from the external perspective to the internal perspective (Zaščerinska, 2011). Further on, both perspectives are inter-related and interdependent: results depend on the implemented process. If the process is carried out in accordance with the plan and schedule, the intended results are obtained. If the process has some deviations from the plan and schedule, results might be different if compared to the intended results. The

process is in fluid and in motion, therefore the result might change along with the shifts in the process implementation.

The present research is enabled by the research question: What are sustainability values to be infused into adult education?

As frameworks of sustainability values for adult education are under-represented, the exploratory research was used in this work. The exploratory research offers a high degree of flexibility (Ahrens, Foerster, Zašcerinska, & Wasser, 2020) for reaching the research objectives. The present exploratory research is based on the methodology of the system of external and internal perspectives. This exploratory research aims at establishing the formal structure to identify the framework of sustainability values (Ahrens, Foerster, Zašcerinska, & Wasser, 2020). This work benefits from the methodology of the system of external and internal perspectives as it helps shape the framework in a novel way.

Scientific literature review as a method of investigation is deployed. Scientific literature review was carried out within the system of external and internal perspectives. The obtained data are processed via content analysis. Content analysis was implemented within the interpretive paradigm. The interpretive paradigm is applied to the analysis of the socially built meaningful reality (Zašcerinska, Aleksejeva, Zašcerinskis, Gukovica, & Aleksejeva, 2021). Interpretations create a meaning (Zašcerinska, Aleksejeva, Zašcerinskis, Gukovica, & Aleksejeva, 2021). Interpreters are the researcher who take part in the research (Ahrens, Purvinis, Zašcerinska, Micevičienė, & Tautkus, 2018).

The relevant findings, obtained from the data analysis, were structured and, thereby theoretical modelling (Ahrens et.al., 2023a) was used for the construction of a framework of sustainable values.

## **Research Results**

The current research follows the logical chain of analysis. The research will start with the analysis of sustainability in Phase 1, proceeding through the definition of values in Phase 2 to modelling the framework in Phase 3.

Our work is based on the finding that sustainability is the unity of external and internal perspectives (Ahrens, Zascerinska, & Aleksejeva, 2021). This definition of sustainability is now extended with sustainable processes belonging to the external perspective and process's results referring to the internal perspective as illustrated in Table 1.

Table 1 *Sustainability as the unity of external and internal perspectives (the authors)*

Sustainability	
<i>External sustainability</i>	<i>Internal sustainability</i>
Sustainable processes	Sustainability results

The notion of sustainability is not static, it is in fluid. The sustainability notion has changed together with the increased understanding of the processes underlying the development of the Earth ecosystem. Table 2 shows the shifts in perception of the notions and procedures of sustainability.

Table 2 *Summary of the changes in the concept of sustainability (the authors)*

Sustainability concept		
	20 <sup>th</sup> Century	21 <sup>st</sup> Century
<b>Notion</b>	Sustainable development is the development that meets the needs of the present generation without compromising the chances of future generations to meet their own needs and aspirations (United Nations, 1987).	Sustainability means prioritising the needs of all life forms and of the planet by ensuring that human activity does not exceed planetary boundaries (Bianchi, Pisiotis, & Cabrera Giraldez, 2022).
<b>Procedures</b>	Three types of approaches (United Nations, 1987): -Economic, -Social, -Environmental.	Nine Earth system processes (Bianchi, Pisiotis, & Cabrera Giraldez, 2022): 1) biosphere integrity, 2) land-use change, 3) climate change, 4) freshwater use, 5) ocean acidification, 6) biogeochemical flows (nitrogen and phosphorus cycles), 7) atmospheric aerosol pollution, 8) stratospheric ozone depletion, 9) release of novel chemicals.

Table 1 helps realise that sustainability is a complex phenomenon. Additionally, the understanding of sustainability is progressing together with the development of science.

Realisation of sustainable development depends on valuing sustainability. Values are the guiding principles that underpin what people believe to be important when making decisions in all areas of private and public life (OECD, 2019). They determine what people will prioritise in making a judgement, and what they will strive for in seeking improvement (Haste, 2018).

In adult education, values shape sustainability competence (OECD, 2019). Table 3 demonstrates elements of sustainability competence elaborated by Bianchi, Pisiotis, & Cabrera Giraldez (2022).

*Table 3 Sustainability competence (adapted from Bianchi, Pisiotis, & Cabrera Giraldez, 2022)*

<b>Sustainability competence</b>		
<i>Valuing sustainability</i>	<i>Supporting fairness</i>	<i>Promoting nature</i>
Personal values	Equity	Natural environment (geosphere, biosphere, hydrosphere, cryosphere and atmosphere)
	Justice	Other species
		Healthy and resilient ecosystems

It is worth pointing that the analysis of the elements of the sustainable competence elaborated by Bianchi, Pisiotis, & Cabrera Giraldez (2022) on the basis of the methodology of the present research, namely the system of the external and internal perspectives, allows determining them as related to the internal perspective. In other words, these elements are defined as results. Therefore, the sustainability competence is presented in a static manner. It seems that each individual has to decide how to approach this competence. In this uncertain situation related to steps that could bring an individual to the desired result - being the sustainability competence, adult education may perform an important and active role.

Adult education can be considered as the means of the development of an individual's sustainability competence. Due to the guiding role of values, they are expected to be embedded into every subject (OECD, 2019) in adult education. Individuals' competencies and, consequently, values are at the centre of their learning framework (OECD, 2019). While learning framework refers to tools that specify learning outcome (Travers, Jankowski, Bushway, & Duncan, 2019), sustainability value framework is based on framework understanding as the unity of concepts used for a particular study/work/field/etc (Ahrens & Zašcerinska, 2014). Hence, sustainability value framework is defined as the unity of values related to sustainability and, consequently, sustainable development.

Our search for a framework of sustainability values led us to the list of sustainability values for children developed by Barreto et.al. (2013). The list of sustainability values encompasses the following categories (Barreto et.al., 2013): resources, knowledge, feelings, community, environment, and myself. Detailed analysis of the sustainability values created by Barreto et.al. (2013) reveals that the authors included both sustainability processes and sustainability results in their list. Their list of sustainability values is a mixture of sustainability processes and sustainability results. The authors did not specify those in the values' descriptions. Table 4 reflects the list of sustainability values proposed by Barreto et.al. (2013) for children in the light of the system of external and internal perspectives.

*Table 4 Sustainability values in the light the external and internal perspectives (adapted from Barreto et.al., 2013 and extended by the authors)*

<b>Value</b>	<b>A short description</b>	<b>Perspective</b>
Efficiency	Avoid waste	Internal
Awareness	Being conscious about environmental issues	
Accountability	Feel responsible for	
Knowledge	Have general and specific information	
Costs	Learn to the difference between save, afford and worth	
Respect	Think of others and of the environment	
Fairness	Do the right thing	
Empathy	Understand and consider others	
Personal Effort	Commit and do more than required	
Future generations	Being selfless, humble, protective	
Thoughtful	Being considerate and polite	
Necessity	Dependence and importance of the environment for humankind survival	
Negative Consequences	Avoid punishment and unsanitary conditions	
Creativity	Transformation and initiative	External
Management of resources	Reduce, reuse, recycle, balance usage and consumption	
Ability to act	Feel empowered, ability to act and the children's influence on their parents	
Cooperation	Sharing and cooperation between different generations	
Communication	Interact with others and learn to share	
Preservation	Protect and save the environment	
Learning	Acquire skills	

Taking into consideration the results of our analysis carried out within the present research, Table 5 presents the framework of sustainability values.

*Table 5 Sustainability values from the external and internal perspectives (the authors)*

<b>Sustainability values</b>	
<i>External perspective</i>	<i>Internal perspective</i>
<i>Sustainable processes</i>	<i>Sustainability results</i>
Nature	Human individual
Other species	Personal values
Equity	
Fairness	
Justice	

It is worth noting that this list of sustainability values is not exhaustive. Together with the development of science and other aspects of our life, sustainable values presented in Table 4 can be updated.

As our research is based on the principle of interconnectedness and interdependence, the external and internal perspectives of sustainability are inter-related as well. Table 6 presents the framework of sustainability values from the external and internal perspectives.

Table 6 Framework of sustainability values (the authors)

Sustainability values	
<i>External perspective</i>	<i>Internal perspective</i>
<i>Sustainable processes</i>	<i>Sustainability results</i>
Use of resources	Low carbon
Reflection	Personal values
Green space	Well-being
Cooperative activities	Reduced socio-economic inequalities
Teamwork	Human health
Learning	Equity
Climate change	Psychological well-being, mental health, and emotions
Physical interaction with the natural environment	Feelings, restoration of nature
Safe and clean environment	Justice
Reduction of emissions	Climate neutrality
Shared economy	Decreased consumption

It should be noted that only a few examples of the inter-connections between sustainability values from the external and internal perspectives can be found in Table 5. In Table 5, the values in the framework are not just listed. They are shown in their interconnectedness and interdependency. Sustainability values related to results are dependent on the values referred to the sustainability process. As the sustainability process changes, sustainability results are in motion, too.

## Discussion

The present work supported the creation of a novel complex framework of inter-related sustainability values. This novel framework is not just a list of sustainability values if comparing to the research implemented by Barreto et.al. (2013). The novel framework of sustainability values is built on the principles of interconnectedness and interdependency of sustainability values. Moreover, the framework proposes a new approach to the categorization of sustainability values, namely the external and internal perspectives. Figure 1 demonstrates the novel framework of sustainability values.

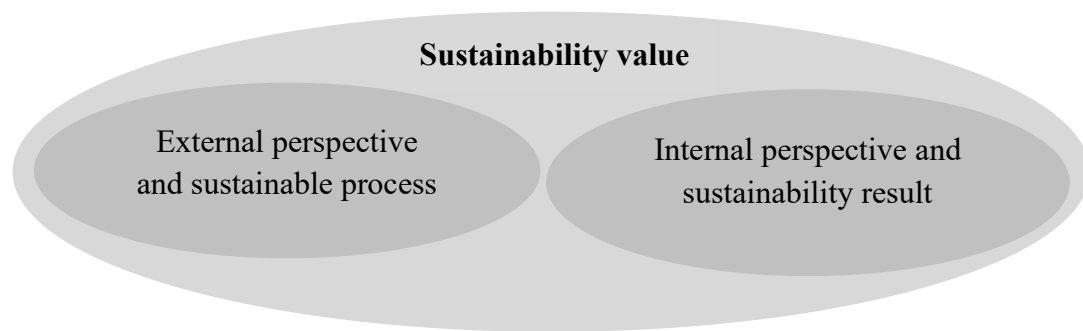


Figure 1 Sustainability value framework (the authors)

In adult education, sustainability values' infusion into adult learning is based on the regularities formulated by andragogy. Although, sustainability values outlined for children by Barreto et.al. (2013) can be applicable to adult education as adult learners might show different levels of competences and experience. However, the use of sustainable values, designed for adult education, in children education might be problematic due to the lack of children life experience required for understanding complex phenomena. It should be pointed that adult education is based on the regularities formulated by andragogy while children are educated by pedagogical means. Andragogy and pedagogy have some similar regularities. However, andragogy implies the education of experienced learners while pedagogy focuses on learners without previous experience. Therefore, the novel framework of sustainability values cannot fully be adapted to children education. Both andragogy and pedagogy recommend a gradual implementation of the educational process in certain sequence (Ahrens, Zascerinska, Filimonova, & Bikova, 2023). Conventionally, the educational process is built in an ascending manner: from the simple to the complex, and from the easy to the difficult. Therefore, there is the high-priority need in educators training to integrate sustainability into adult education (Bianchi, Pisiotis, & Cabrera Giraldez, 2022). Training has to empower educators to learn and to be able to transfer to adult learners how to bridge the major tension within sustainability practice, being the tension between maintaining the status quo and changing our existing structures and relationships (Griswold, 2016).

## Conclusions

The theoretical analysis of scientific literature allows concluding that sustainability values are an under-explored topic in scientific community.

The use of the methodological background is validated by the results of the present research. The achieved research results highlight the significance of the interconnectedness, interdependency and motion when determining the inter-relations between sustainable values from the external and internal perspectives.



The leverage of the exploratory methodology in the given work allows building a formal structure for the identification of a framework of sustainability values. It includes

- Analysis of the key concepts such as sustainability, values, and framework in Phase 1,
- Analysis of the existing models of frameworks of sustainability values and their comparison in Phase 2, and
- Creation of a new framework of sustainability values in Phase 3.

The theoretical analysis leads to the conclusion that sustainability values can be of the external and internal perspectives. Sustainability values of the external and internal perspectives are inter-related. Sustainability values develop and change together with the science progress. Sustainability values guide the development of individual's competences. Despite the guiding role of sustainability values in the development of individual's competences, sustainability values in adult education have not been adequately explored by the scientific community. Theoretical modelling of sustainability values from the external and internal perspectives facilitated the establishment of links between external and internal sustainability values. The use of sustainability values in adult education from only one perspective might mislead the development of individual's competences.

The new research question has been formulated: What are modern methods to foster adult learners' sustainability values?

The carried out research experienced some limitations. As the topic sustainable values is under-explored, only few works could be found via google search and analysed. For analysis only digital materials were selected. The research was also limited by the analysis of scientific literature in English only.

Further research intends to increase the search for non-digital materials for analysis. Analysis of scientific literature in other languages will be carried out, too. Implementation of empirical studies on use of sustainability values in adult education is proposed as well.

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## TOWARDS EDUCATION 2050: METHODOLOGICAL OBSERVATIONS

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**Abstract.** Education 2050 is a determining factor of Future 2050. Therefore, different attempts to envision Education 2050 have been undertaken, and their results have been presented to the wider public. However, the scientific view on Education 2050 is under-represented, and the methodology of envisaging Education 2050 remains under-explored. The aim of this paper is to analyse methodologies applied to the projection of Education 2050. The exploratory research is employed in this work. Data were collected via observations and processed via content analysis. Findings were structured, summarized and compared, and allowed concluding that the use of methodologies in the works selected for analysis of Education 2050 is fragmentary. Only some methodology's elements are leveraged for shaping Education 2050 in the analysed works. The aspect of Information and Communication Technologies prevails in projecting Education 2050 in the works available for analysis. The analysed works have more differences than similarities in the use of methodological elements related to the design of Education 2050. A new research question has been formulated: What is a methodology for envisioning Education 2050? Limitations of the research have been presented. Further work has been proposed.

**Keywords:** education 2050, methodology, observation, practice, principles, procedures, world.

### Introduction

Every day our world changes in a tangible and an intangible way, thereby the world develops. The changes, including tangible and intangible effects, in the world are inter-connected. A small shift can bring a big effect. It also works in an opposite way: a big change may lead to a little effect.

Science is well-recognized to be the driver of moving the world to a better future for all. Science and research (the basis of science) are aimed at solving the dilemma of cause, on the one side, and effect, also known as change, on the other side.

By world, the unity of external and internal components (Zascerinska, 2011) is meant. The notion of the term “world” is wide as the world includes everything what exists. Table 1 gives an overview of the world’s external and internal components (ChatGPT, 2023; Cambridge Dictionary, 2023).

*Table 1 Overview of the World’s External and Internal Components (the authors)*

External Components	Internal Components
Other planets	The earth
Stars	The people
Galaxy	Places
Objects	Physical entities
	Culture
	Ideology

*Source: The authors.*

Some of the world’s components are tangible, e.g. stars, people, etc. Some of the world’s components are intangible, for example culture, galaxy and others. Tangible and intangible elements can be found in both, namely the world’s external and internal components. Figure 1 shows the world and the external components such as stars.



*Figure 1 The World and external components (pexels.com)*

Figure 2 illustrates the world’s internal components such as human being (the hand is visible in the picture), animal, and nature. In Figure 2, the interaction between human being, animal, and nature is recognizable. These three components, namely human being, animal, and nature, are relevant to different domains of our life.



*Figure 2 The World and internal components (pexels.com)*

Life is defined as a subset of the world (ChatGPT, 2023b). Life has different aspects of functioning (Moore, 2021), also known as domains. Figure 3 demonstrates some of the domains of our life.

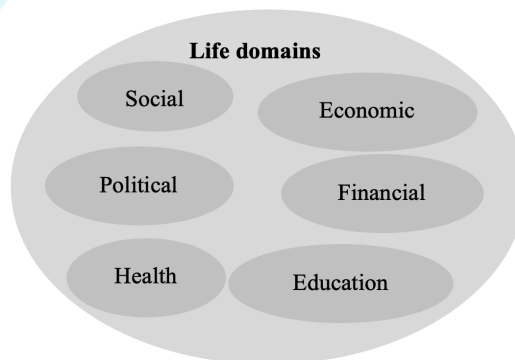


Figure 3 *Life domains (the authors)*

Life domains interact with each other. By interaction, obvious or non-obvious influence on each other in the process of interaction is meant (Nikiforovs, 1994). Table 2 presents types of interaction between the external and internal components of the world.

Table 2 *Types of Interaction Between the World’s External and Internal Components (the authors)*

Nr.	Types of Interaction
1.	Between the external components only
2.	Between the internal components only
3.	Between the external and internal

Source: The authors.

Here, the world development can be discussed as a permanent process. The development process brings a change into one of the domains of our life. This change in one domain of our life impacts the other domains of our life and the overall world progress and evolution.

Education is a crucial domain of our life (Zascerinska & Ahrens, 2016). Education is impacted by other domains such as economy and finance, on the one hand, and, on the other hand, education influences many other domains of our life such as social, financial, political, health, education (Zascerinska & Ahrens, 2016). Due to the importance given to education in tackling challenges faced by the world, education attracts a lot of attention from the scientific community, industrial stakeholders, and political representatives, futurists, etc. Therefore, different attempts to envision Education 2050 were undertaken, e.g. by Haste & Chopra (2020), UNESCO (2021), ElanWave (2022), B-Lessons Academy (2022), NewsReports (2022), International Education Forum (2023), etc. Education 2050

as a cause is expected to bring a desirable, viable and feasible effect in future. From the scientific point of view, the methodology plays a decisive role to project Education 2050. Methodology allows for building a logical and sequential Education 2050 (Andreeva, Zaščerinska, Zaščerinskis, & Aļeksejeva, 2014). Methodology also gives an opportunity to realize in a fast manner in which step and what exactly have to be updated and improved (Andreeva, Zaščerinska, Zaščerinskis, & Aļeksejeva, 2014) in Education 2050 preparation and implementation. However, the methodology of envisaging Education 2050 remains under-explored.

The aim of this paper is to analyse methodologies applied to the projection of Education 2050.

### **Research Methodology**

The enabling research questions were put forward:

1. What methodologies are leveraged to envision Education 2050?
2. Are there any similarities and differences between the methodologies in published works used for analysis?

The study purpose was

- To decompose the collected methodologies,
- To measure their scientificity, and
- To compare their similarities and differences.

The exploratory study was implemented in September 2023. The exploratory study was chosen as the emphasis is on perspective and relative importance (Edgar & Manz, 2017). The exploratory studies are largely an inductive process to gain understanding (Edgar & Manz, 2017). The exploratory study is undertaken to analyse a phenomenon that of interest for a researcher (Zainal, 2007). The exploratory study embraces the phenomenon that is under-explored (Ahrens & Zasherinska, 2021). When the experimental process goes from a general theory to an understanding in specific, exploratory studies observe specific phenomena to look for patterns and arrive at a general theory of behaviour (Edgar & Manz, 2017). The emphasis is on evaluation or analysis of data, not on creating new designs or models (Edgar & Manz, 2017).

The exploratory study proceeded in three phases (Ahrens, Bassus, & Zaščerinska, 2013; Hariharan, Zaščerinska, & Swamydhas, 2013). Phase 1 intended to collect the data. For this, the materials for analysis were collected. The materials included published documents, research papers, newspaper articles, blog articles, conference key notes, conference panel discussions and etc. The published materials were reached via google search. The conferences video recordings kept on youtube were investigated, too. Table 3 summarizes the materials, found published between 2017-2023, for analysis in this work.

Table 3 *The summary of published materials used for analysis (the authors)*

Nr.	Concept	Authors
1.	The futures of education for participation in 2050: educating for managing uncertainty and ambiguity	Haste & Chopra, 2020
2.	Life in 2050: A Glimpse at Education in the Future	Williams, 2021
3.	Education 2050: A Glimpse at the Future	B-Lessons Academy, 2022
4.	Predictions on How Education Will Look Like in 2025, 2030, and 2050	ElanWave 2022
5.	Glimpse at How Education Will Possibly Look Like in 2050	Hill, 2023
6.	The Future of Education – A 2050 Projection	NewsReports, 2022
7.	Global Citizen Education	GENE, 2022
8.	Education in the 21 <sup>st</sup> century	Steinberga & Špona, 2017
9.	Future 2050	Forum, 2022
10.	Megatrends and the Future of Skills	Hiltunen, 2023

Source: *The authors.*

Data were collected via observation in Phase 1. Observation allows for building of an adequate picture that emerges from the research setting as a social system described from a number of participants' perspectives (Geertz, 1973).

Phase 2 focused on data processing, analysis and interpretation. Content analysis was used for the collected data processing and analysis. Pedagogical interpretation employed in the present study means that only the data, that are of pedagogical interest, are processed and analysed (Zascerinska, Emet, Usca, & Bikova, 2023). Interpretation was carried out by the researchers involved in the present research and study (Ahrens, Purvinis, Zaščerinska, Miceviciene, & Tautkus, 2018). The data were structured, summarised, and compared.

Phase 3 related to the formulation of an updated research question.

## Research Results

**Research Methodology.** Methodology is the main component in research (Zogla & Lubkina, 2020). Research is the procedural basis of science (Ahrens & Zascerinska, 2015a). Figure 4 demonstrates the relationships between science, research, and methodology.

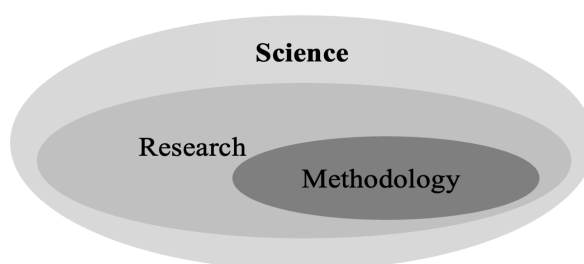


Figure 4 *Relationships between science, research, and methodology (the authors)*



Science means the knowledge about the world: the notion, structure and processes of different world’s phenomena (Ahrens et.al., 2023). Research is a means of broadening scientific knowledge about the world. Research is the process (Ahrens & Zascerinska, 2015a). Methodology represents the rationale and procedures of the research process implementation.

By methodology, the combination of principles, practices, and procedures applied to any specific branch of knowledge is meant (Karapetjana, 2008; Ahrens & Zascerinska, 2015a). Figure 5 presents the methodology elements.

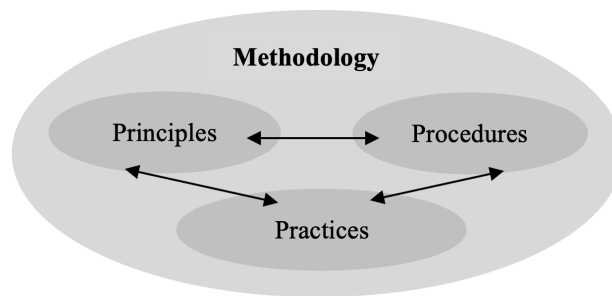


Figure 5 *Methodology elements (the authors)*

Principle means an individual combination of beliefs and assumptions that determine researcher's attitude to the world, his/her behaviour’s norms and actions (Ahrens & Zascerinska, 2015b). Principle is also a condition of activity (Beļickis et.al, 2000) and explains how a phenomenon works (Zogla, 2019).

Practice appears when two people with entirely different actions, e.g., learning and teaching in education, are involved by research (Zogla, 2018).

Procedures are traditionally described as an algorithm or a number of steps (Ahrens & Zascerinska, 2015a).

Table 4 summarizes the methodological elements and sub-elements.

Table 4 *The summary of methodological elements and sub-elements (the authors)*

Nr.	Element	Sub-element
1.	Principles	-beliefs -assumptions -condition of activity
2.	Practices	-vision -definitions -trends -values -skills
3.	Procedures	-algorithm -formula

Source: *The authors.*

A research methodology gives research legitimacy and provides scientifically sound findings (Indeed Editorial Team, 2023). It also provides a detailed plan that helps to keep researchers on track, making the process smooth, effective and manageable (Indeed Editorial Team, 2023). A researcher's methodology allows the reader to understand the approach and methods used to reach conclusions (Indeed Editorial Team, 2023).

The benefits of the use of the research methodology in research are (ChatGPT, 2023c):

- **Validity:** Research methodology helps to ensure that the research is conducted in a way that is valid, meaning that it measures what it is supposed to measure and that the conclusions drawn from the research are based on accurate and reliable data.
- **Reliability:** Research methodology helps to ensure that the research is conducted in a way that is reliable, meaning that it produces consistent results and that the conclusions drawn from the research are based on data that is consistent and reliable.
- **Generalizability:** Research methodology helps to ensure that the research is generalizable, meaning that the conclusions drawn from the research can be applied to other populations and settings.
- **Objectivity:** Research methodology helps to ensure that the research is conducted in an objective way, meaning that it is free from bias and that the conclusions drawn from the research are based on data that is unbiased and accurate.
- **Efficiency:** Research methodology helps to ensure that the research is conducted in an efficient way, meaning that it uses the least amounts of resources necessary to achieve the research objectives.

The structural elements of methodology (principles, practice, and procedures) served as an inspiration for determining the levels of scientificity (the scientific status of the research work) to be used for the analysis of research works, e.g., published materials in this research, are defined and shortly described in Table 5. The description was based on a number of methodological elements used in a research work.

*Table 5 Levels of scientificity of research works (the authors)*

<b>Level Nr.</b>	<b>Level</b>	<b>Use of methodological elements</b>
1.	Scientific	Use of 3 methodological elements (principles, practices, and procedures)
2.	Almost scientific	Use of 2 methodological elements
3.	Somewhat scientific	Use of 1 methodological element
4.	Non-scientific	No use of any methodological elements

*Source: The authors.*

**Methodological observations.** In total, 10 materials published between 2017-2023 were used for methodological observations. The focus of methodological observation was on the analysis of methodologies. Observations did not intend to analyse Education 2050 projections in detail to find out how realistic the projections are.

In most of the online publications (Morelli 2020; Williams 2021; B-Lessons Academy, 2022; ElanWave 2022; Hill, 2023) selected for observation and analysis, no methodology is presented. These works focused mostly on the aspect of the use of Information and Communication Technologies (ICT) in Education 2050.

The methodology of the work entitled “The Future of Education – A 2050 Projection” (NewsReports, 2022) was based on the identification of current trends in ICT: 1.The Metaverse Trend. 2.Trend in Data Privacy Regulations. 3.Microservices and Cloud-native Platforms. 4.Mergers and Acquisitions Brought on by Labor Shortages in the Tech Industry. 5.AI Research and Development.

The methodology of Global Citizen Education (GENE, 2022) was built on the implementation of the following key steps:

1. A shared vision on the basis of existing international agreements in a host of documents that serve as the foundation for the new Declaration was shaped.
2. A renewed definition of global education was created.
3. Analysis of challenging global context via the identification of core values of human rights, sustainability, justice, equality, peace, international understanding with the focus on the interconnection between local and global dimensions of issues affecting people and planet; between generations; between cultures and between past and present and future was carried out.
4. Global Education was increased and improved via the commitment to pedagogical practices that are inclusive, participatory, inspire hope, enable critical thinking, and do justice to the primacy of the learners.

This methodology was based on the engagement and consultation processes during meetings with policymakers, international institutions, youth, researchers, global critical friends, and civil society organizations, and other key stakeholders implemented from June 2021 to November 2022. The consultations were a partnership to consider specific views, needs and possibilities of each stakeholder (GENE, 2022).

Finally, the Dublin Congress was organized in 2022. The Congress brought together over 300 participants, representing ministries and agencies, youth organizations, civil society, local and regional governments, academia, and international organizations. For the adoption of the new Declaration on Global Education to 2050, several measures were taken (GENE, 2022): high level political interventions and inspiring keynotes; panels on policy coherence, public

engagement; on common visions, universal access and on new paradigms; parallel Sessions for different stakeholder streams and for differing locii of global education; spaces for networking and for structured dialogue between policymakers and stakeholder; and formal inter-ministerial session with national statements and commitments.

Observations on the topical aim of education in the 21st century highlighted a free, independent and responsible personality (Steinberga & Špona, 2017). According to human development, the principles of Education in the 21st century are free choice, independence and responsibility (Steinberga & Špona, 2017).

Observations aimed at understanding of methodologies applied to shape Education 2050 during Forum “Steering Education: From Imagination to Impact” (2022) revealed that Future 2050 would be value challenging time (Forum, 2022). During Forum 2022, it was stated that societies are based on values (Forum, 2022). There was discussion about what do not have to be changed in Education 2050 (Forum, 2022). Three principles in relation to Future 2050 and, consequently Education 2050, were proposed to be the principle of simplicity, the principle of centrality, and the principle of humility (Forum, 2022). A concrete operational strategy for an institution was presented during the Forum (2022): dialogue, identity challenges, design solutions, experiments with solutions, and Evaluation (Forum, 2022).

During the Forum “Steering Education: From Engagement to Empowerment” (2023), the futurology formula for anticipating the future was presented: facts plus imagination plus mega trends (Hiltunen, 2023). It should be pointed that the presented futurology formula, based on imagination, offers weak plausible reasoning without use of qualitative and quantitative methods (Pirozhkova, 2016). Mega trends are big global long-lasting trends that will affect the future (Hiltunen, 2023). The present mega trends include (Hiltunen, 2023) climate change; ecocrises and loss of biodiversity; increase of population; demographic change; urbanization; globalization; increase of wealth and consumption; increase of inequity; digitalization; and technological development.

Based on the futurology formula for anticipating the future, metaskills for the future were emphasized (Hiltunen, 2023): general education; media literacy and media criticism; teamwork skills; empathy; stress management and pressure tolerance; creativity; problem solving; learning the new and unlearning the old; environmental skills; cultural knowledge; technology understanding; cyber security skills; digital skills; entrepreneurship and self-management; presentation and communication skills; flexibility and adaptability; and anticipation skills.

The observations revealed that half of the published materials used a methodology.

## Study Findings and Discussion

Table 6 highlights the use of methodological elements, namely principles, practice, and procedure, in the published materials used for analysis.

*Table 6 The use of methodological elements in the published materials used for analysis (the authors)*

Concept	Author(s)	Used element
The futures of education for participation in 2050: educating for managing uncertainty and ambiguity	Haste & Chopra, 2020	None
Life in 2050: A Glimpse at Education in the Future	Williams, 2021	None
Education 2050: A Glimpse at the Future	B-Lessons Academy, 2022	None
Predictions on How Education Will Look Like in 2025, 2030, and 2050	ElanWave 2022	None
Glimpse at How Education Will Possibly Look Like in 2050	Hill, 2023	None
The Future of Education – A 2050 Projection	NewsReports, 2022	-Practice (trends)
Global Citizen Education	GENE, 2022	-Practice (vision, skills, values) -Procedures (steps)
Education in the 21 <sup>st</sup> century	Steinberga & Špona, 2017	-Principles
Future 2050	Forum, 2022	-Principles -Procedures (operational strategy)
Megatrends and the Future of Skills	Hiltunen, 2023	-Practice (trends, skills) -Procedures (formula)

Source: *The authors.*

Our observation shows that both practice and procedures were addressed the same number of times, namely three. However, practice and procedures are governed by principles. Our finding here is the practical and procedural aspects of Education 2050 prevail in the published materials chosen for analysis.

A level of scientificity of each published work was identified based on the summary of the use of the methodological elements and sub-elements pointed in Table 6. Table 7 presents the overview of the levels of scientificity of the published materials used for the analysis in this work.

**Table 7 The summary of scientificity levels of published materials used for analysis (the authors)**

Level	Concept	Author(s)
4	The futures of education for participation in 2050: educating for managing uncertainty and ambiguity	Haste & Chopra, 2020
4	Life in 2050: A Glimpse at Education in the Future	Williams, 2021
4	Education 2050: A Glimpse at the Future	B-Lessons Academy, 2022
4	Predictions on How Education Will Look Like in 2025, 2030, and 2050	ElanWave 2022
4	Glimpse at How Education Will Possibly Look Like in 2050	Hill, 2023
3	The Future of Education – A 2050 Projection	NewsRe-ports, 2022
2	Global Citizen Education	GENE, 2022
3	Education in the 21 <sup>st</sup> century	Steinberga & Špona, 2017
2	Future 2050	Forum, 2022
3	Megatrends and the Future of Skills	Hiltunen, 2023

Source: The authors.

Five published materials are determined to be non-scientific, two of 10 as almost scientific, three of 10 as somewhat scientific.

Table 8 summarizes the study results related to the analysis of principles, practices, and procedures of Education 2050 in the published materials used for analysis.

**Table 8 Principles, practices, and procedures of Education 2050 in the published materials used for analysis (the authors)**

Methodological element	Short description of the element	Reference
Principles	-Principles of Future 2050 -Education in the 21 <sup>st</sup> century principles	-Forum 2022 -Steinberga & Špona, 2017
Practices	-A shared vision - A renewed definition -Megatrends -Current trends in technology -Core values  -Metaskills	-GENE, 2022 -GENE, 2022 -Hiltunen, 2023 -News Reports, 2022 -GENE, 2022 -Forum, 2022 -Hiltunen, 2023
Procedures	- Formula for the anticipating the future	-Hiltunen, 2023

Source: The authors.

The finding of our study is that the interest to Education 2050 is growing every year. In 2017-2021, only one material on Education 2050 was published. In 2022, already five. The present study reveals that the published works on

Education 2050 used for analysis in this research are not fully scientific. They only contain some of the methodological elements and sub-elements. The presented concept of methodology consisting of principles, practices and procedures, has not been fully employed in the published materials chosen for analysis.

The description of ICT aspect prevails in the presented concepts of Education 2050. ICT aspects of Education 2050 are presented without the use of methodology and its elements as well as sub-elements.

Similarities in the methodologies used to project Education 2050 refer to the emphasis on the importance of the identification of core values (GENE, 2022; Forum, 2022) when predicting Education 2050.

Our study reveals that the use of methodological elements when shaping Education 2050 was different: in the selected materials different methodological elements were leveraged. That can be explained that there are different cultural backgrounds of different intellectual traditions in education (Zogla, 2021).

## **Conclusions**

The theoretical modelling facilitated the conclusion that science, research, and methodology are inter-linked. The methodology is the key component in the supply chain of research and science. The theoretical analysis informed that methodology is the central component that drives both - research and science. The significance of methodology in moving research and science reveals the importance of the use of methodology in phenomena envisioning, projection, prediction, and similar, too. The use of methodology in research and in studying a phenomenon is beneficial as the methodology ensures validity, reliability, generalizability, objectivity and efficiency of the research and study implementation.

The results of the present research allow concluding that the scientific view on Education 2050 is under-represented. The lack of scientific perspective on Education 2050 might lead to a one-sided Education 2050 projection, for example with the focus on ICT in education only. This might affect the process of Education 2050 implementation and its results in an unintended way.

The empirical study shows that the use of methodologies in the works selected for analysis of Education 2050 is fragmentary. Only some methodology's elements are leveraged for shaping Education 2050 in these works. ICT aspect prevails in projecting Education 2050. The prevalence of practical and procedural aspects in envisioning Education 2050 has to be aligned with the principles of their governing.

The analysed works have more differences than similarities in the use of methodological elements related to the design of Education 2050. The increase in

similarities when discussing Education 2050 will make them a trend, and a trend helps project Education 2050 (Zašcerinska, 2023).

An updated research question has been put forward: What is a methodology for envisioning Education 2050?

The present research has some limitations. A limitation is that the links between science, research, and methodology have been set. The established inter-connections between principles, practices and procedures as methodological elements might be a limiting parameter, too. The observations are limited by the number of investigated materials related to Education 2050. Four levels of scientificity might limit the research findings, too.

Implications for the scientific community imply the enhancement of researchers' competence of the design and application of methodologies in scientific research.

The recommendation for researchers is to increase their efforts in leading the envisioning Education 2050 on the scientific basis. Another recommendation here is to strengthen the concerted efforts of researchers, policy makers, stakeholders, and the wider public in discussion of Education 2050.

In future research, the role of Education 2050 has to be described. Involvement of researchers from different scientific disciplines in investigation of the application of methodologies in shaping Education 2050 would be beneficial. Further research could also shed light on the leverage of ChatGPT as a research method. Ethical concerns related to the use of ChatGPT as a research method could be disclosed in more detail.

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## IMPLEMENTATION OF INTEGRATED CYBER EDUCATION IN EUROPE

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**Abstract.** *The development of partnerships between European countries in the field of cyber education is currently playing a significant role in enhancing countries' cyber potential and comprehensive and systemic counteraction to cyber threats. The research aims to outline the main principles of implementing an integrated cyber education system in European countries. To solve the tasks set, the research uses the following methods: cognition methods to study theoretical foundations of digital education development; comparative and analytical methods to analyze National Cybersecurity Indices and Digital Development Level Indices of the EU and Ukraine; heuristic (expert) methods to formulate the goal, objectives, conclusions and recommendations to form a multilevel generalized model of cyber education; and logical and formalized methods to outline the relevance of cyber education to counter cyber threats.*

*The research discusses the issue of digital education, presents National Cybersecurity Indices and Digital Development Level Indices of countries, explores the gaps between National Cybersecurity Indices and Digital Development Level Indices of the EU and Ukraine, and outlines the basic principles of the European Cybersecurity Taxonomy. The main research results are the proposed categorical apparatus of integrated cyber education in European countries and the multi-level generalized model of cyber education to gradually acquire skills and abilities to combat cyber threats introduced from primary school to adult education.*

*Thus, a comprehensive acquisition of skills to combat cyber threats will help to develop knowledge, skills and abilities of European citizens in the field of cybersecurity and improve the cyber potential of European countries. The introduction of unified regulatory courses and methodological support developed in accordance with the best international practices and harmonized with the terminology of EU and NATO member states will enable effective cooperation in a single information and cyber space.*

**Keywords:** *cyber education, cyber threat counteraction, cybersecurity, digital skills, integrated cyber education system.*

## **Introduction**

In today's digital world, cybercrime is a key threat to global economic growth. Raising the culture of citizens' behavior on the Internet, information security, and dissemination of global rules for combating cybercrime can help combat such crimes. At the G20 meetings and those of Ministers of Telecommunications and Information Technology, the issues of information security and critical Internet infrastructure management are regularly discussed.

## **Digital education**

The EU Cybersecurity Strategy published in 2020 (*The Cybersecurity Strategy, 2023*) aims to strengthen Europe's resilience against cyber threats and ensure that all citizens and businesses can fully benefit from trusted services and digital tools.

According to the strategy (*The Cybersecurity Strategy, 2023*), approximately two-fifths of EU citizens have experienced security problems, and three out of five feel that they cannot protect themselves from cybercrimes. One third of citizens have received fraudulent emails or phone calls, but 83 % have never reported a cybercrime.

According to the strategy (*The Cybersecurity Strategy, 2023*), the EU Action Plan for Digital Education will raise public awareness of cybersecurity (Digital Education Action Plan, 2020), with children, youth and organizations as the main target group. The strategy also states that cybersecurity skills should be further improved at the EU level through formal education and training (including vocational training), cybersecurity training and cyber exercises to ensure that all Internet users have a global, open, stable and secure cyberspace where everyone can live a safe digital life.

According to a study by the Cybersecurity Education Initiatives in the EU member states (2022), schoolchildren are often seen as early adopters of digital technologies, and they are a critical group to address and ensure that the next generation has the required skills to use online space more safely.

According to Article 10 of the Cybersecurity Law (*The Cybersecurity Act, EU 881 / 2019*), the European Union Agency for Cybersecurity (ENISA) has the mandate to "raise public awareness of cybersecurity risks and provide guidance on good practices for individual users, targeting citizens, organizations and businesses, including cyber hygiene and cyber literacy". This is demonstrated through initiatives such as the European Cyber Security Month, the European Cybersecurity Challenge, the European Cybersecurity Skills Framework, and the Cybersecurity Higher Education Database (CYBERHEAD). At the level of member states, simply introducing cybersecurity into school curricula can help

ensure that young users are more familiar with and aware of the field and requirements of cybersecurity.

However, knowledge of the country's cybersecurity level, its readiness to prevent cyber threats, and its ability to manage cyber incidents and criminal activity in cyberspace are closely related to the country's level of digitalization, which is an important element of strategic analysis and forecasting of economic development. This information, in turn, is used to develop and implement cyber capacity building programs.

### **National Cybersecurity Indices and Digital Development Levels of Countries**

Since 2016, with the support of the Estonian Development Cooperation and Humanitarian Aid, which is managed by a program of the Ministry of Foreign Affairs of Estonia, the E-Governance Academy has developed the National Cybersecurity Index (*NCSI, 2023*), which provides an assessment of a country's cybersecurity and also enables seeing the criteria and sources on which the assessment is based. Thus, the NCSI is a database with publicly available evidence and a tool for building national cybersecurity capacity.

So, Table 1 presents NCSIs and Digital Development Level Indices (DDLIs) of the EU and Ukraine for 2023.

*Table 1 NCSIs and DDLIs of the EU and Ukraine for 2023  
(The National Cyber Security Index Ranking, 2023)*

Rank	Country	NCSI	DDLI	NCSI-DDLI gap
1.	Belgium	94.81	74.07	20.74
2.	Lithuania	93.51	67.34	26.17
3.	Estonia	93.51	75.59	17.92
4.	Czech Republic	90.91	69.21	21.70
5.	Germany	90.91	80.01	10.90
6.	Romania	89.61	59.84	29.77
7.	Greece	89.61	64.02	25.59
8.	Portugal	89.61	68.46	21.15
10.	Spain	88.31	72.21	16.10
11.	Poland	87.01	65.03	21.98
12.	Austria	85.71	75.76	9.95
13.	Finland	85.71	78.35	7.36
15.	France	84.42	77.29	7.13
16.	Sweden	84.42	81.51	2.91
17.	Denmark	84.42	82.68	1.74
18.	Croatia	83.12	64.63	18.49
19.	Slovakia	83.12	65.44	17.68
20.	Netherlands	83.12	81.86	1.26
23.	Italy	79.22	67.26	11.96

25.	Latvia	75.32	66.23	9.09
26.	Ireland	75.32	75.18	0.14
28.	Bulgaria	74.03	62.06	11.97
37.	Hungary	67.53	64.25	3.28
38.	Slovenia	67.53	69.74	-2.21
41.	Cyprus	66.23	68.83	-2.60
43.	Luxembourg	66.23	78.40	-12.17
76.	Malta	50.65	71.74	-21.09
24.	Ukraine*	75.32	55.96	19.36

Source: (The National Cyber Security Index Ranking, 2023).

\* is not a member of the EU

As can be seen from Table 1, the top 8 positions among the world's countries in terms of cybersecurity are occupied by EU countries, in particular Belgium, Libya, Estonia, Czech Republic, Germany, Romania, Greece, and Portugal. Malta shows the lowest levels of cybersecurity among EU countries.

The DDLIs of the EU and Ukraine in 2023 range from 59.84 to 82.68 points. The following countries have a lower level of digital development: Romania, Greece, Croatia, and Bulgaria. Sweden, Denmark, and the Netherlands showed the highest levels of digital development in 2023 among EU countries.

The analysis of the data in Table 1, namely the gap between the NCSIs and DDLIs of the EU and Ukraine in 2023, reveals a significant gap between the analyzed indicators (Fig. 1).

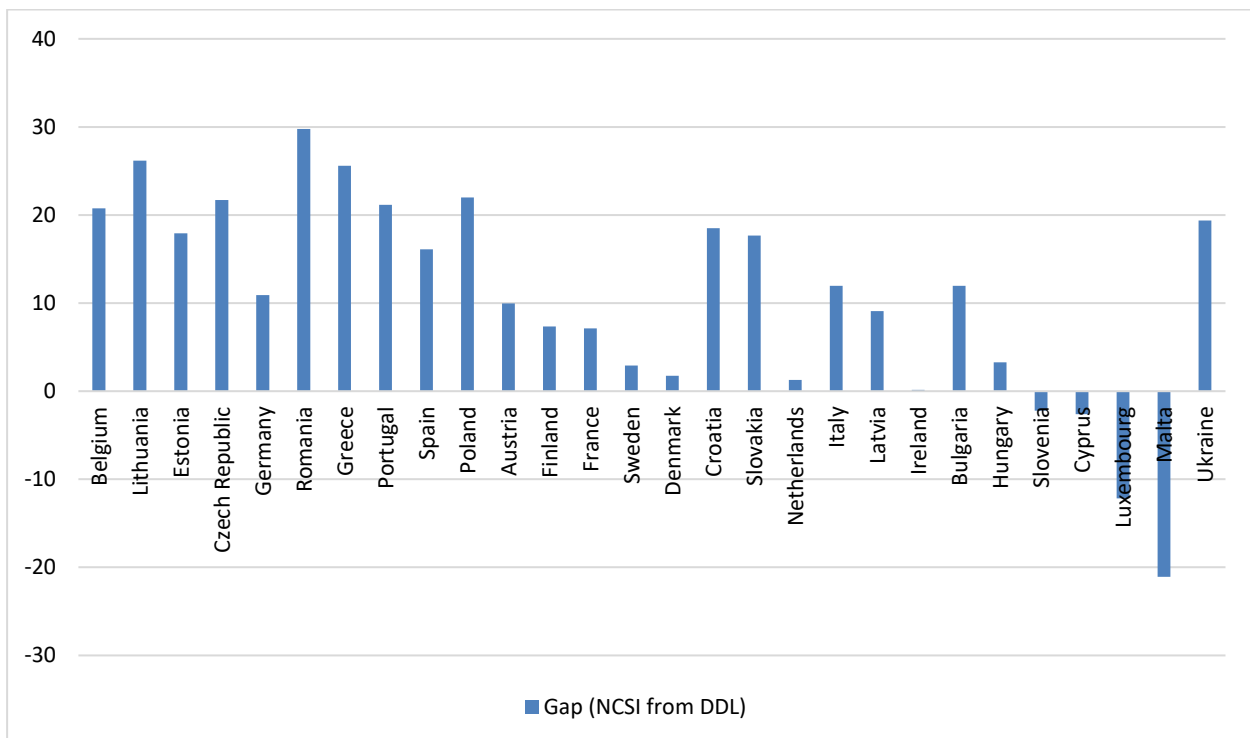


Figure 1 The gap between the NCSIs and DDLIs of the EU and Ukraine in 2023 (Developed by the authors)

Taking into account the results of the deviation between the NCSIs and DDLIs of the EU and Ukraine in 2023, it is recommended to consider the possibility of forming an integrated system of cyber education in Europe.

Promoting decent work and economic growth, building resilient infrastructure, fostering inclusive and sustainable industrialization and promoting innovation, and reducing inequalities within and between countries requires cybersecurity capacity development to strengthen processes, skills, resources, and research and development aimed at enhancing national capabilities (*Arbidane et al., 2021*). Cybersecurity capacity also strengthens the development of collective capabilities and the facilitation of international cooperation and partnerships to effectively respond to cybersecurity-related digital security challenges.

The increase in effective cybersecurity awareness is essential to maintain vigilance among citizens, companies, governments, youth and organizations. With the current shift to digital services, governments need to ensure that all users are aware of the risks they face when conducting digital activities.

The rapid pace of technological development of society and its comprehensive digitalization are driving the growth of technological complexity and the scale of cyber threats in both the private and public sectors of the economy. All of this requires continuous improvement of the training program for professionals in cybersecurity with new hands-on knowledge and skills.

### **European cybersecurity taxonomy**

The European cybersecurity taxonomy includes the following spatial dimensions (*Fovino et al., 2019*):

- Areas of research and expertise in various aspects of cybersecurity, including human, legal, ethical, and technological areas.

Examples of research areas include theoretical foundations of cybersecurity, warranty, audit and certification, cryptology (cryptography and cryptanalysis), data security and privacy, human aspects, identity management, incident handling and digital forensics, legal aspects, network and distributed systems, security management and leadership, security measurement, software and hardware security engineering, fiduciary management and responsibility.

- The sectoral dimension focuses on various cybersecurity issues and challenges in relation to specific industry sectors, such as energy, transportation, or financial services.

Examples of industrial sectors include audiovisual and media sectors, the chemical sector, defense, digital services and platforms, the energy sector, the financial sector, the food and beverage sector, the state, the health sector, production and supply chains, the nuclear power sector, safety and security, space, telecommunications infrastructure, and transportation.



- The technology dimension, which covers cybersecurity issues for a wide range of key technologies used in the interests of various programs and industry sectors.

Examples of technological dimension elements include artificial intelligence, big data, blockchain and distributed ledger technology, clouds, edge computing, virtualization, protection of critical infrastructure, disaster resilience and crisis management, hardware technologies (chips, sensors, networks, etc.), high-performance computing, human-machine interface, industrial control systems, information systems, Internet of Things, embedded systems, mobile devices, operating systems, quantum technologies, robotics, satellite systems and applications, automotive systems, and unmanned aerial vehicles (UAVs).

These dimensions cover a wide range of cybersecurity issues (*Lloyd's, 2023*). Spatial dimensions include all spheres of modern life and require a comprehensive, step-by-step approach for Europe's cyber citizens to acquire both hard and soft skills.

Currently, taking into account the opinions and research of modern scholars, we can state the problem of the lack of a unified methodology in the EU cybersecurity training system for all specialists, both at the public and private levels. The lack of unified guidelines, methodological support for training, and divergent views on the purpose, objectives, and content of cybersecurity training reduces the effectiveness and quality of training of internationally recognized cyber specialists.

### **Multi-level generalized model of cyber education**

In view of the above, in order to develop European cooperation in the field of cyber education, it is necessary to improve the implementation of the relevant framework by studying international experience and generalizing best practices (Fig. 2).

**Cybersecurity education** concerns learning about technology, online behavior, and security measures to protect personal and corporate information. This involves understanding the risks associated with using the Internet and ways to mitigate those risks.

**The purpose of cyber education** is to ensure effective cyber defense of the single digital space of European countries by training and improving the competence of specialists in various fields and areas of cybersecurity, cyber protection and cyber defense.

**Subjects of cyber education** are public and private higher education institutions, IT schools (training centers), secondary schools, lyceums, colleges of vocational education, adult education institutions.

**The task of cyber education** is to increase digital literacy of Europeans and the culture of safe behaviour in cyberspace, solve complex tasks, develop skills and abilities necessary to support cybersecurity goals.

**Cyber education opportunities** include acquiring digital literacy skills, understanding the processes of digital transformation, cyberspace vulnerabilities, and the ability to counter cyber threats; countries' potential to develop cyber defense and cybersecurity in the modern digital space.

*Figure 2 Categorical apparatus of cyber education  
(Developed by the authors)*

The introduction of educational innovations, enhancement of their effectiveness, and creation of a comprehensive system of practical training will enable:

- creating a modern holistic and flexible system of professional development;
- ensuring the quality and continuity of experience through professional development and self-education;
- creating appropriate conditions for the realization of employees' right to professional growth; and
- developing professional competence.

To increase the level of digital skills to counter cyber threats to cyber citizens, awareness about cybersecurity needs to be raised at the citizen, government and organizational levels (*Tanriverdiyev, 2022*). This means that

cybersecurity issues are included in the national curriculum, from primary and secondary education to the academic environment.

For the practical implementation of the first (preschool) stage of cybersecurity education, it is advisable to introduce the course *Elementary Cyber Hygiene* into the variable subject *Computer Literacy*, which should be developed by specialists in the field of preschool education in close cooperation with professionals in all areas of cybersecurity.

The second stage of cybersecurity training is school-age training. It can be divided into several courses according to the level of school education: primary education, basic secondary education, and high school. For primary school education, cybersecurity training should be a continuation of pre-school training at a higher level of understanding (the *Cyber Hygiene* course).

For basic secondary education and high school, it is considered appropriate to include cybersecurity issues in the independent subject *General Cybersecurity* and to develop competences in the safe use of electronic devices, networks, software, passwords, mail, electronic accounts, safe behavior when using social networks, protection of personal data, prevention of violations of international and national legislation on cybersecurity, etc. Another task of high school is to form a correct idea of a possible future profession of a cybersecurity specialist, identify talented students and give them an impetus for development.

The next, third stage of cybersecurity training is the training of specialists in higher educational institutions, which can be conditionally divided into 4 groups.

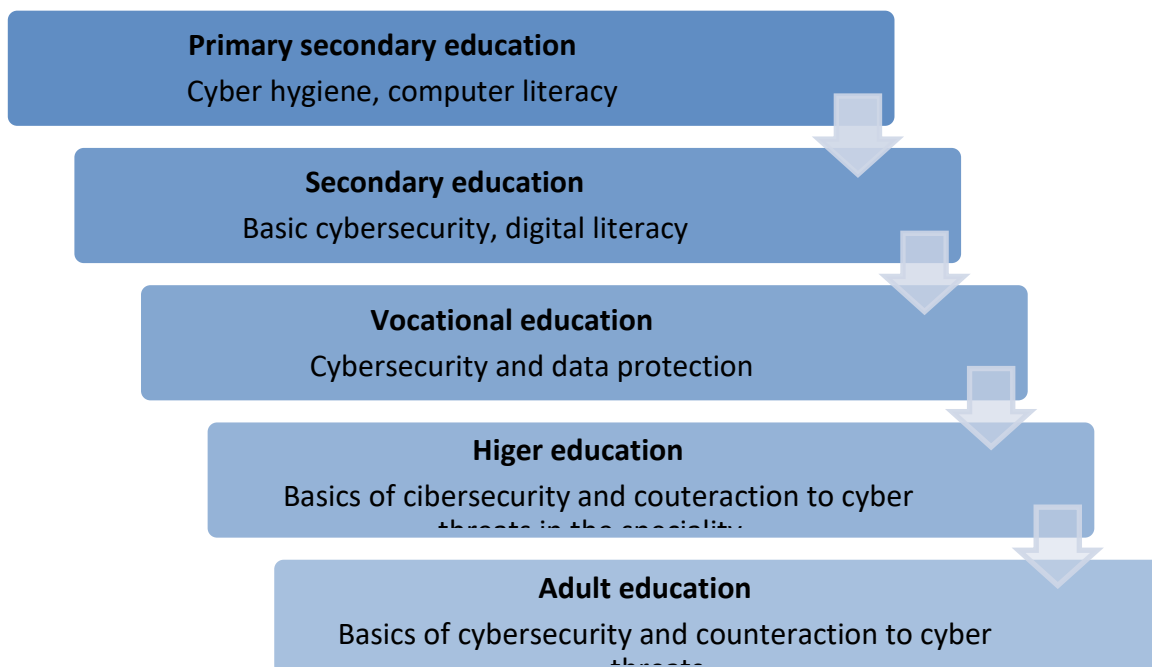
The first group includes institutions that provide training in the fields of knowledge that cover the humanities, natural sciences, and other sciences not related to in-depth study of IT. In order to formulate common views on cybersecurity issues, these higher educational institutions should provide a general course on the basics of cybersecurity.

The second group is higher educational institutions that train specialists in technical fields with in-depth study of IT who will work at critical (in terms of cyber defense) infrastructure of the state. The third group includes higher educational institutions that train specialists in the fields of *Information Technology, Automation and Instrumentation, Electronics and Telecommunications*. The training of these specialists should be distinguished by more thorough knowledge compared to that of specialists in other fields of knowledge.

The fourth group is made up of higher educational institutions that train specialists in cybersecurity. The main content part of the curriculum for such specialists should be organically interconnected subjects in cybersecurity and information and communication technologies. It is impossible to train a cybersecurity specialist without a deep understanding of the essence of modern high technologies, including information and telecommunication technologies.

*Adult education* is a separate component of cyber education. Cyber education is vital for people of all ages, as technology and online behavior affect everyone (*World Economic Forum, 2022*). However, the approach to cyber education may differ depending on the age group. For children and adolescents, cyber education can focus on online safety, responsible use of social media, and avoiding cyberbullying. For adults, cyber education can focus on protecting personal information, identifying and avoiding online fraud, and understanding the importance of strong passwords and security measures. It is crucial for people of all ages to receive cyber training to stay safe and informed in today's digital world.

Therefore, a multi-level generalized model of cyber education should provide for the gradual acquisition of skills and abilities to counter cyber threats (Fig. 3).



*Figure 3 Multi-level generalized model of cyber education  
(Developed by the authors)*

The introduction of unified regulatory courses with methodological support, developed in accordance with the best international practices in harmony with the terminology of the EU and NATO member states, would enable avoiding differences in terminology and views on the content of cybersecurity issues, forming a common understanding of cybersecurity, ensuring unification and standardization of training with the leading countries of the world, and providing an opportunity to effectively cooperate in a single informational and cyber space.

## Conclusions

The integration of higher education institutions, academic and industry sectors should help ensure high-quality training of cybersecurity specialists. In this context, the introduction of innovative technologies such as virtual laboratories into the activities of educational institutions should be of particular importance. After all, cyber education is currently characterized by an insufficient level of innovation activity. To some extent, this is due to the fact that science, which is currently divided into academic, industry-related, and university sciences, is unfortunately unbalanced in its efforts to develop and implement new organizational forms that fit the logic of market relations, including in the field of cyber education. Overcoming these shortcomings will help consolidate cyber education, engage employers in training IT specialists, and accelerate the formation of a competitive main productive force of society.

Lifelong learning is gaining prominence in global educational processes, as dictated by the basic trends of modern human development. In our opinion, this approach will fundamentally change the cybersecurity training system. Unfortunately, it is still overwhelmingly focused on the needs of the past.

The modern economy requires personnel ready to work in a competitive environment, i.e. in an innovative economy.

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# CHALLENGES IN THE PROFESSIONAL DEVELOPMENT OF PUBLIC SERVANTS AMID NEW REALITIES IN ADULT EDUCATION: CONCEPTUALIZATION OF COMPETENCE AND SYSTEM APPROACHES

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**Abstract.** *The article examines the multifaceted problems faced by public servants in their professional development within the dynamic conditions of adult education's new challenges within the conceptualisation of competence and the need for system approaches. The challenges in the professional development of public servants in the context of adult education necessitate a reimagining of competence and the adoption of system approaches. Conceptualising competence in a multidimensional way, including digital and interdisciplinary dimensions, is essential. System approaches that integrate training programs, promote continuous learning, coordinate government-wide efforts, and include diverse stakeholders offer a comprehensive solution to address the complex challenges faced by public servants in the contemporary landscape of adult education. By embracing these approaches, public sector organisations can ensure that their workforce is well-equipped to navigate the evolving demands of governance effectively. As practical material for the study, the authors of the article used theoretical and practical experience in training civil servants in Ukraine and the PR China (in particular, the experience of training management personnel in these countries both in the field of formal and non-formal education, as well as the very concept of “managing personnel”).*

**Keywords:** *civil servants, education management, local officials, officials’ professional training in PR China, officials’ professional training in Ukraine, professional development, professional training of officials.*

## **Introduction**

Recent few years have become turbulent for European countries and the world in general. In 2015, with the adoption of the Sustainable Development Goals (What are the Sustainable Development Goals, 2024) as a basic strategy for the development of humanity, it seemed that the main vector was defined and the only thing we needed was to consistently follow it. The global challenge of the Covid-19 pandemic forced societies around the world to review their development strategies. The changes in strategies affected not only health care systems, but education as well. The Pandemic and strict total restrictions that were associated with the policy of “0 tolerance to the disease and the strategy for developing general immunity” (Martins, Carlos, & etc., 2019) made the countries to revise approaches to such fundamental social phenomena as social management, human rights and education (Kalashnyk, Krasivskyy, 2020). At all levels of lifelong education, teachers, employers, and managers were forced to rethink not only the form of education (as the distance education became dominant and the only opportunity available), but also the content of it, widen (to narrow) the content and set of competencies necessary for lifelong education (Ji, Kalashnyk & etc., 2021). Another challenge for the European region was the war in Ukraine, which started with the Russian invasion in February 2022. From the point of view of education management and lifelong education, it became a real test for the education systems of different countries, involved in the refugee programs for the Ukrainians. It has become necessary for European countries (in the majority) in a short period of time not only to integrate a large number of students of various ages into the school and higher education systems, but also to relearn and adapt several million adults: a new language, new professional competences within the limits of existing qualifications, obtaining a new professional qualification etc. (over 4.2 million people from Ukraine benefit from the temporary protection mechanism. Data up to November 2023 (Infographics - Refugees from Ukraine in the EU, 2024)). The existing challenges highlighted the varied strategies employed in training specialists across different countries and underscored the challenges in decision-making for management. Officials from various nations found it challenging to devise a coherent policy for adult education during times of crisis. They discovered the need to navigate and overcome these hurdles while also reconciling divergent educational paradigms prevalent in different countries. Consequently, the authors of the article advocate for considering two distinct approaches to training, especially for officials, that are demonstrated in different countries: competency-based and systemic (alternatively termed systemic-institutional based on specific characteristics).

The purpose of the article is to compare the systems of professional development in Ukraine and the People's Republic of China, to determine the components of the systems that allow for the development of officials.



The goals of the article were achieved thanks to research methods: analysis (to determine the initial provisions of the professional development systems of officials), comparison and research of legislation (to compare the strengths and weaknesses of the professional development systems in Ukraine and the PRC), forecasting and modeling methods (to determine the possibilities of implementing foreign experience ).

The similarities and contradictions of the systems of increasing the level of professional competence of the People's Republic of China and Ukraine can be characterized from several key positions. China and Ukraine in the modern world are each unique in their own way. The PRC is one of the most powerful economies in the world, which is developing very quickly, and this is facilitated, in particular, by the public administration system of this country. Ukraine is in a military conflict and at the same time trying to ensure the efficiency of state administration. A comparison of professional development systems on the example of education throughout the life of officials can help determine how public servants in the two countries adapt to effective administrative management.

### **Literature review**

Scientific publications reflecting general trends in the use of systematic and competency-based approaches to civil servant training within the concept of "Adult Education" were utilized for this research. These publications are referenced as positions (Ji, F. and et... 2021; Kalashnyk, N.,2020 ; Seryogin, S., 2013; The CAG Global..2022; What are the Sustainable...2024 ) in the current article's Reference List. Additionally, works were consulted to understand the application of these approaches in the contexts of Ukraine and China, along with historical perspectives. For Ukraine, relevant positions in the Reference List are (Ji, F. and et... 2021; Kalashnyk, N.,2020; On the approval...2019), while for China, positions (Jing, Y., 2016; Meriade, L., 2015; Sun, Zh., 2013; Wang, LL.,2019; Yang, K., ...2012) were consulted. In addition to scholarly literature, documents and regulations at the national level were examined to validate the authors' assumptions regarding the current state of the investigated problem. Official websites of key institutions such as the National Civil Service Administration of the PR China, European Council, Verkhovna Rada of Ukraine, Cabinet of Ministers of Ukraine, National Agency of Ukraine on Civil Service, PKU Research Center for Chinese Politics (RCCP), and Chandler Institute of Governance were accessed for this purpose. These sources provided valuable insights into policy frameworks, legislative measures, and institutional practices related to civil servant training and development in both Ukraine and China.

## **Methodology**

Writing an article, the authors involved scientific methods commonly used in educational research and related fields. In particular, *the Literature Review method* lets the authors set the actual picture of existing approaches on adult education, professional development, competency-based education, and systemic approaches to understand the current state of knowledge, identify gaps in research, and build a theoretical framework for the article. Using the *Case Studies method* real-world cases of professional development programs for public servants in different countries (such as Ukraine and China) were analysed to provide rich, contextualised data that can illustrate the challenges and successes of implementing competency-based and systemic approaches. The *Document Analysis method* contributed a lot to the analysis of state policy documents, training materials, and other relevant documents and helped to understand the official discourse and practices surrounding professional development in public service in countries under consideration as well as helped uncover implicit assumptions, contradictions, and barriers to implementation. Under the *Comparative Analysis method* were analysed different approaches to professional development in public service across countries and highlighted variations in policy frameworks, cultural contexts, and institutional structures that influence the adoption and effectiveness of competency-based and systemic approaches in different countries. Since the authors of the article are educators actively engaged in lifelong education programs and the training of state servants in their respective countries, encompassing both the theoretical development of such programs and instructing this distinct student demographic, they employed the *Action Research method*. This approach involves showcasing the theoretical provisions based on the outcomes of the authors' hands-on collaboration with public servants and educational institutions to conceive, execute, and assess inventive professional development initiatives. By employing these scientific methods, the authors of the article tried to rigorously investigate the challenges and opportunities in the professional development of public servants amid new realities in adult education, and contribute their insights to the field.

## **Research results**

The landscape of adult education is rapidly evolving, driven by technological advancements, socio-cultural shifts, and global interconnectedness. Within this context, the professional development of public servants assumes paramount importance, as they navigate complex challenges while fulfilling their duties to serve the public interest. China and Ukraine, despite their geographical and cultural differences, both face challenges and

opportunities in this regard. Both countries represent contrasting approaches to professional development in public service. China's centralised system emphasises top-down training programs and standardised assessments, focusing on technical skills and ideological education. In contrast, Ukraine has experienced decentralisation efforts aimed at empowering local governments and fostering innovation in public administration. Ukrainian approaches prioritise flexibility, adaptability, and democratic values in professional development initiatives.

In Ukrainian academic circles, there has been a prevailing notion for some time that "professional development involves nurturing qualities, specialized knowledge, abilities, and skills among civil servants crucial for the effective execution of their official functions, rights, and duties" (Seryogin, Borodin, Lipovska, 2013). However, in 2017, the adoption of the "Concept of reforming the system of professional training of civil servants, heads of local state administrations, their first deputies and deputies, officials of local self-government and deputies of local councils" marked a significant shift. This transition marked a move away from the systemic (systemic-institutional) concept towards a competence-based approach.

According to the new requirements outlined in the reform concept, the system of professional training for public servants is now viewed as a combination of training subsystems, specialisation, and advanced training for officials. It is perceived as a comprehensive set of interconnected components, which include:

- Identification of professional training needs
- Establishment, allocation, and execution of a state order
- Encouragement of motivation to enhance professional competence
- Maintenance and development of the educational services market in professional training
- Monitoring and assessment of education quality (On the approval of the Regulation ..., 2024).

While remnants of the systemic-institutional concept persist within the system, the dominance of the competence-based approach is evident.

In 2019, a significant advancement occurred with the normative regulation of the structure and components of the professional training system for public servants. During this period, several guiding principles were officially endorsed, including mandatory and continuous professional training throughout public service tenure, ensuring the quality of education and educational activities, individualisation and differentiation of learning approaches, promoting openness and academic integrity, and facilitating access to educational services within the individual's place of residence and service (Methodological recommendations, 2024). This marked a pivotal moment as the system of professional development began to offer opportunities for personalised learning

experiences, thus solidifying the conceptualisation of the competence approach within the Ukrainian framework of adult education for public servants.

However, it's important to note that this transition didn't entirely discard the institutional aspect of the professional development system for public servants. Between 2019 and 2022, higher education institutions underwent restructuring, previously solely responsible for training and retraining public servants, integrating into other higher education entities. Presently, the institutional framework of the professional training system for officials in Ukraine comprises:

- customers of educational services in professional training
- entities providing educational services in professional training (providers)
- self-regulatory professional associations (professional associations, professional networks) representing entities providing educational services in professional training (providers) (Methodological recommendations, 2024; ).

The above mentioned issues indicate that the educational services market within this field in Ukraine is now highly democratised and competitive. Institutions of higher education vie for prominence through their educational programs in public administration, specialised areas, provision of professional development services, and scientific programs.

China's rise as a global economic powerhouse has been accompanied by a determined endeavour to fortify its public service sector. At the core of this initiative lies the adoption of a system approach in professional development, which underscores the broader institutional landscape within which public servants function. The roots of this approach can be traced back to China's socialist governance framework and entrenched bureaucratic traditions. Since the inception of the People's Republic of China in 1949, the Chinese government has placed significant emphasis on constructing a centralised administrative system capable of effectively implementing socialist policies and programs. This approach has prioritised hierarchical structures, standardised procedures, and adherence to ideological principles within the public service sector (Yang, Wu, Xu, Chen, 2012). From the earliest years of the country's existence and up to the 1980s, China embarked on extensive administrative reforms necessitated by the tumultuous events that had shaken its centralised governance and management system. The collapse of the Imperial Qin Dynasty's centralised system during the latter half of the 19th century, exacerbated by the aftermath of the Opium Wars, and the subsequent turmoil during the years of the Civil War (1927-1949), underscored the imperative for reform. These reforms have been chiefly focused on streamlining bureaucratic procedures, decentralising decision-making authority, and advancing accountability and transparency in public administration. Following the reforms

of 1985, the government's efforts have been directed towards the modernisation of the state management sphere. For instance, the State Council's reform initiatives initiated in 1991 have led to the establishment of pilot administrative service centres across various provinces and municipalities. These centres offer integrated services to citizens and businesses, marking a significant step towards enhancing administrative efficiency and responsiveness to the needs of the populace (Jing, 2016).

The implementation of performance management systems exemplifies the system approach within China's professional development landscape, serving as a cornerstone for enhancing organisational effectiveness, boosting employee motivation, and improving governance performance in contemporary China. This approach is evident across various institutions in the state, government, and public sectors. State institutions, such as the State Administration of Civil Service (SACS) and the Ministry of Human Resources and Social Security, play pivotal roles in shaping and standardising performance management practices. SACS oversees the National Civil Service Performance Appraisal System, evaluating civil servants' performance at all government levels, while the Ministry of Human Resources and Social Security develops and standardised performance management practices, offering guidelines and training programs to ensure consistency and effectiveness in performance evaluations. Local government initiatives, such as the Guangdong Civil Servant Performance Appraisal System and the Beijing Municipal Civil Servant Performance Appraisal System, align civil servants' performance evaluations with key performance indicators (KPIs) linked to the province's or city's development objectives. These assessments focus on areas like service quality, innovation, and leadership, bolstering organisational effectiveness and service delivery.

Public sector enterprises also contribute significantly to the adoption and integration of performance management systems, fostering a culture of accountability and continuous improvement. For example, China Mobile, a global telecommunications giant, implements performance management systems to optimize operational efficiency and enhance customer satisfaction. China National Petroleum Corporation (CNPC) as well employs performance management systems to evaluate employee performance across its diverse business operations, aiming for operational excellence and competitiveness within the energy sector (In-depth analysis ..., 2022). The Chinese state government system sees system approach to professional development in the country as a quiet perspective one as it not only enhances an organisation's effectiveness but also promotes accountability, transparency, and continuous improvement, aligning with China's broader goals of sustainable development and global leadership (Civil Service Training Regulations, 2020).

The adoption of the competence approach in China's professional development can be traced back to the late 20th century. Following the

economic reforms initiated by Deng Xiaoping in the late 1970s, China embarked on a path of modernisation and globalisation, necessitating a skilled and adaptable workforce. In response, the Chinese government began to prioritise competency-based training programs aimed at enhancing the capabilities of public servants to meet the challenges of economic restructuring, urbanisation, and social transformation (Meriade, Li, 2015). The practical examples of competence approach to the in professional development of public servants in China implementation can be seen in:

- Establishing *specialised training programs* targeting key sectors such as finance, technology, and public administration. These programs provide public servants with targeted skill development opportunities tailored to the specific needs of their roles. For example, the China Executive Leadership Academy Pudong (CELAP; Shanghai) offers training programs focusing on leadership, innovation, and governance for senior officials from across the country;
- Implementing competency assessment and certification mechanisms to evaluate the proficiency of public servants in key areas. The National Civil Service Examination (NCSE) assesses candidates' competencies in areas such as policy analysis, decision-making, and communication skills. Successful candidates receive certification, enhancing their career prospects and contributing to a merit-based public service system;
- The competence approach in China extends beyond traditional public sector boundaries to foster collaboration between government, academia, and industry. Initiatives such as the National Key Laboratories and Joint Research Centers (started as state start-up programs in 2017) bring together public servants, researchers, and industry experts to address complex challenges through interdisciplinary collaboration. This approach promotes knowledge exchange, innovation, and skill development across sectors, enhancing the overall effectiveness of public service delivery;
- Priority of lifelong learning initiatives to ensure continuous professional development among public servants. Programs such as the National School of Administration's Executive Education Program (offered by Tianjin and Shanghai High courses for state servants and management personnel) offer opportunities for mid-career officials to enhance their skills and knowledge through short-term training courses, seminars, and workshops. These initiatives promote a culture of continuous learning and adaptation, enabling public servants to stay abreast of emerging trends and best practices (Wang, 2019; Training methods ..., 2021).

The competence approach has emerged as a cornerstone of professional development for public servants in China, reflecting the country's commitment to building a skilled and adaptable workforce capable of addressing complex governance challenges. Through specialised training programs, competency assessment mechanisms, cross-sectoral collaboration, and lifelong learning initiatives, China is equipping its public servants with the skills, knowledge, and abilities needed to navigate the complexities of modern governance effectively (Sun, 2013). As China continues to prioritise capacity building and innovation in public administration, the competence approach will remain central to its efforts to achieve sustainable development, social cohesion, and global leadership.

Despite their differences, China and Ukraine share common challenges in professional development, including adapting to rapid technological changes, promoting ethical governance, and addressing socio-economic disparities. By studying how each country navigates these challenges, policymakers and educators can gain new perspectives and identify best practices that can be adapted to their own contexts. As both countries seek to modernise their governance systems and enhance public service delivery, adopting a global perspective is essential for staying abreast of international developments. By examining how China and Ukraine respond to new realities in adult education, policymakers and educators can identify emerging practices and technologies that have global relevance and applicability.

## **Conclusions**

In the modern context, the professional development of public servants within the dynamic landscape of adult education carries a multifaceted significance. Firstly, it necessitates a response to the swift pace of technological advancements, socio-cultural shifts, globalisation, and international collaboration. Public servants are challenged to acquire and adapt to new tools and technologies, enhancing their performance in this rapidly evolving environment. In addressing these challenges, the competency approach emerges as particularly advantageous, emphasising individual skill development and adaptability. Conversely, a host of issues stemming from political and legal transformations, risk management challenges, and ethical considerations, including anti-corruption efforts, are better addressed through a systemic approach to professional development. This approach considers the interconnectedness of organisational dynamics and external influences, providing a comprehensive framework for tackling complex issues within the public service sector.

The authors note a positive trend towards departing from rigidly defined concepts of official training, favouring instead the integration of diverse

approaches traditionally employed in adult education. This integrated approach recognises the importance of both individual competencies and systemic factors in shaping public service practice. By combining targeted skill development with a nuanced understanding of organisational dynamics and external influences, public servants can effectively navigate the diverse challenges of their profession. By embracing both the competency and systemic approaches, policymakers, educators, and practitioners can develop holistic professional development initiatives that empower public servants to excel in their roles and meet the evolving needs of society.

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## VALUE OF INNOVATION IN LIFELONG LEARNING: PEDAGOGICAL AND SOCIAL CONTEXT

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**Abstract.** *The key competences for lifelong learning have become an integral part of social work and the educational process in Ukraine. Therefore, in this review, we focused on the theoretical aspects of the developed strategies for implementing the competence framework for lifelong learning that are based on the fundamental international documents; analysed the value of this approach for the country's development in general and in specific aspects (based on research and information on the efficiency of implemented projects in this area that are publicly available); and provided a detailed review of the main proposals for the implementation of lifelong learning programmes in the public sector, project activities, and other relevant measures. This made it possible to analyse the main directions of implementation of the relevant state policy, their compliance with the standards and vector of lifelong learning development in international practice, as well as to identify problems and prospects for the development of the Ukrainian state strategy for lifelong learning.*

**Keywords:** *lifelong learning, pedagogical innovation, social innovation, values.*

### Introduction

As part of our research on inclusive education, issues and strategies for implementing socially significant projects and engaging students of primary education, preschool education, social work, and psychology, we also address the issue of lifelong learning. This term is gradually becoming part of the disciplines, occupying its own niche in theory and practice.

For example, in their research, our colleagues prove that trends in the economy are closely related to education. They point out that the more educated a person is, the more he or she needs to constantly update their knowledge. This explains the desire for career growth and the demand for such employees, increased mobility, higher salaries and personal motivation for development. Thus, in a knowledge-based economy, education becomes a strategic factor in social development, and achieving this goal is seen as lifelong learning (Levchenko, et al., 2018).

This relationship can be seen in the relationship between educational attainment and personal income, according to the frameworks implemented in each country. Although, despite the economic prerequisites for making education the fourth Millennium Development Goal, there is a number of

discussions about the appropriateness of considering this issue, as its functions are clear and its format remains quite stable (even with the advent of technology and the transition to online education).

Among the theses that support the role of education are the following statements:

- education is a basic state programme that prepares a citizen who will work for the benefit of the state;
- education forms a personality through the acquisition of basic knowledge, formation and development of skills and abilities that will contribute to self-realisation and adaptation in society.

However, the main position of education within the framework of the proposed innovations and the need to form a new paradigm of lifelong learning is based on the issues of technological evolution and digitalisation. It is in this aspect that it is worth noting that the concept of literacy is no longer limited to reading and writing, it goes beyond the classroom system and focuses on developing the ability to learn continuously throughout life, expanding the concept of education to include formal, non-formal and informal learning in a variety of environments (Santos, Gomes, 2024). This will in itself facilitate the exchange of knowledge and experience, reduce the gap between generations and ensure social engagement at any stage of life, at any age.

This contributes to the search for innovative solutions and changes in the field of education, which in modern conditions constantly accompany teachers and society, who seek positive changes, effective solutions that will affect quantitative and qualitative indicators in all spheres of life. After all, thanks to technology, combined with the medical and social sectors, culture and economy, etc., we get a constant extension of the "active age", which affects the increase in the retirement age through additional levers in demographic and economic policy. At the same time, this does not change the fact that people of retirement age, just like young people and adults, want to maintain their social activity. And this is quite difficult to do in today's environment. The following questions arise:

- the desire to learn and master new skills and technologies, which is highly dependent on the culture of the nation/country where a person lives (and even on government programmes offered and developed on the basis of the same culture and traditions);
- the same training of older people (whether it is state support or help from family and friends). In the case of the latter, it is worth considering the fact that young people do not always have the patience to explain "elementary" things, and adults often "do not have time for such trifles";
- accessibility of both gadgets and the Internet itself, because different countries have different economic situations, although even in

developed countries there is a share of those who cannot afford such a luxury as an additional modern means of communication.

If we look at some studies by our Ukrainian colleagues, it is also worth noting that the age groups of adults over 50 differ not only in terms of their place of residence, but also in terms of their habits, financial independence and mobility, level of education, health and access to services of government agencies and NGOs, etc. Referring to the analysis of the level of education among adults in this group in European countries, our colleagues note that the level of education varies significantly from country to country, including active knowledge of foreign languages, which is much weaker among older people than among the younger generation (Sahun, 2009). This leads not only to a significant difference in the understanding of the problem of lifelong learning, but also to the need to develop mechanisms for such learning in each country participating in this process separately from others, considering the main goal but creating an individual development strategy.

That is why the purpose of our study is to analyse the issues of innovations in lifelong learning, considering the pedagogical and social context of their implementation.

Based on the research objective, we have outlined the following tasks:

- to study the theoretical aspects of the developed strategies for implementing the competence framework for lifelong learning based on basic international documents;
- to analyse the value of this approach for the development of the country as a whole and in certain aspects (based on research and information on implemented projects in this area available in the public domain);
- to review the main proposals for the implementation of lifelong learning programmes in the public sector, project activities at the international and national levels.

This, in turn, made it possible to determine the value of innovations in lifelong learning, their impact on the educational paradigm, and the further application of individual practices to achieve effect in the pedagogical and social context.

### **Theoretical basis of the research: social context of the issue of innovation in lifelong learning**

Thus, we turned to existing analytical materials on the functioning and development of programmes and projects in the field of lifelong learning. And, taking into account the main materials that are in the public domain, we can clearly see that the main focus is on technology and its use at all stages of

growing up to create the need for self-development and self-improvement on a daily basis.

Guided by the thesis that lifelong learning is education for the knowledge economy. Within this lifelong learning, formal education - primary, secondary, higher, vocational, etc. - is less important than learning and meeting the needs of learners (Levchenko, et al., 2018). After all, if we continue to proceed from the needs of an industrial society whose main functions are already performed by automated production lines, and in the near future will be performed by robots equipped with artificial intelligence, education will reduce the potential of the individual, and its efficiency will be zero, if not negative. And the negative value already has its precedents, when children, youth, and adults do not complete their education.

This will also lead to a number of negative events in the social sphere (unemployment, lack of qualified personnel in line with market needs, low purchasing power, etc.), in culture and traditions (which depend on social well-being, life satisfaction and a gradual transition to virtual worlds of communication), and, of course, in the economy, which is directly related to the previous spheres of life. Moreover, they have a mutual vector of influence, and the state should foresee and prevent crises in the economy through them.

In addition, from a European perspective, the Europe 2020 Strategy identifies common challenges that are closely related to education and lifelong learning, namely (1) an ageing society, (2) skills shortages in the workforce and global competition, and (3) high unemployment. As European labour markets are nationally diversified and dynamic, education and employment are directly linked: The skills, competences and qualifications deemed necessary for participation in social and economic life need to be constantly adjusted (Schröder, Baumeister, 2015).

In the context of the above, we fully agree that key competences for lifelong learning have become an integral part of social work and education in the world and in Ukraine. As our colleagues note, Lifelong Learning in this sense is a pivotal challenge in itself and a means to tackle global challenges (Schröder, et al., 2017).

This, in turn, creates the need to form a personality with a flexible mind, capable of critical and creative thinking, processing constantly changing information and quality knowledge of basic subjects, to use the experience gained in social reality or in a virtual environment. All this can only be achieved through effective communication between the labour market and the education and training sector (Schröder, Baumeister, 2015). Thus, according to the scientists, such efficiency can be reflected through the use of the four pillars of the knowledge-based economy in practice. In particular:

- economic institutional regime that provides incentives for the effective creation, dissemination and use of existing knowledge;

- education through an educated and skilled population that can use knowledge more effectively;
- information infrastructure that facilitates efficient communication, dissemination and processing of information;
- innovation, consisting of organisations that can use global knowledge stocks, assimilate and adapt them, and create local knowledge (Levchenko, et al., 2018).

Such an approach to the economy, shifting the emphasis to knowledge, will ensure stable growth in all areas of life, including the development of science, which will promote innovation. This is probably why in the European Reference Framework of Key Competences for Lifelong Learning, Brussels proposed a new concept of modern European education, which should develop vital universal characteristics in students to be applied in various rapidly changing contexts - individual, professional, and social (Lokshyna, 2019). This, in turn, has contributed to a shift in the emphasis of formal education from the triple goal of knowledge, skills, and abilities to their practical value and ability to apply them in real life, i.e. to the framework of competences required for real life.

### **Pedagogical aspect of innovations in lifelong learning: experience and prospects**

As noted in scientific research, modern theorists, researchers and practitioners in numerous international discussions, together with political, cultural figures and the media, talk about the future of education. They refer to the history of the formation of the educational system and the latest technological developments that occupy their position/niche in the process of learning and personality formation. They claim completely new and extraordinary chances, sometimes promising new eras and paradigms of learning, such as the theory of connectivism, social learning; fundamentally new ways of learning .0/3.0 by analogy with the terms web 2.0/3.0; concepts and descriptions of our world as a "flat world", leading to predictions that "learning to learn" will become the most important asset for all workers because of all the changes and rapid innovation. It is argued that this is a new movement and progress, but it has been clear and obvious in pedagogy for several hundred years (if not longer) that 'learning to learn' is essential for learning and progression, as well as for personal development and competences (Stracke, 2014). It is interesting that against the background of such diversity and heterogeneity of views, opinions and concepts, everyone agrees that lifelong learning is the most effective way to solve the problem of the education system. And from what has already been written on this topic, we return to the issues of interest in learning about the world, which is laid down in the first stages of

human life, functioning as a person in socially and geographically defined conditions. It sounds like an example from a stimulating game, but this is a practice of pedagogical work that, in order to ensure an individual approach, should include all the indicators and stimuli that influence the development of interest in learning about a person.

It is also worth paying attention to the issue that has been studied by considering social innovations for lifelong learning. And, according to the results of which, it was determined how such innovations should be distinguished. In particular:

- reducing educational disadvantages, which are characterised by great diversity and relevance around the world;
- new forms of learning, interactive education: a more homogeneous field with high innovation potential;
- digital inclusion through new digital and virtual learning environments for socially disadvantaged groups;
- improving the quality of formal education;
- strategic partnership between education and the economy (transition management, labour market needs, skills mismatch and shortage of professions) (Schröder, et al., 2017).

All of this once again repeats, complements and clarifies the main levers for replacing the wheels in the mechanism of implementing the educational paradigm. It also allows us to take a look at the proposals and projects currently being implemented in the field of lifelong learning based on their compliance with the real needs of human capital in the labour market for sustainable economic development, social and cultural growth.

Such searches led to the development and generalisation of the following areas of social innovation in education and lifelong learning:

- interconnection with and impact on formal education (pre-school education, lifelong learning),
- non-formal/informal learning and the problems of recognition and certification of such learning outcomes,
- e-inclusion (orientation of people in the digital world and promotion of digital literacy, integration of citizens in access to and use of digital media) as a promising "vehicle" for personal development, active citizenship, social integration and employment with high potential for certain regions and target groups,
- the process of aligning the needs of the industry with the offers of education and lifelong learning
- urgent decisions on new forms of learning organisation and relevant pedagogical principles (Schröder, et al., 2017).

These challenges should address a number of social and economic problems directly related to the shortage of skills, their inconsistency with

professional requirements; lack of quality career planning and professional orientation in school years, stereotypical thinking in this area; the need for continuous updating of skills and competencies, search for new strategies for lifelong learning; expanding educational opportunities through accessibility, recognition of non-formal and informal learning, use of new digital and virtual learning environments. Of course, we have presented only a tenth of the proposal, but the main thing we need to take on board is the combination of formal, non-formal and informal education, which has been discussed more than once, training a new generation of teachers and changes in the education system to meet the needs of the modern world. In addition, we must understand that this part of innovation includes the development of teachers' digital competence, as teachers in the lifelong learning phase still have significant shortcomings in various skills that develop it, which means that we must continue to encourage initial and continuing training in this area (Garzón Artacho, et al., 2020).

In addition, skills mismatches and shortages are barriers to competitiveness, and ignoring demographic trends can accelerate skills shortages (Ohienko, 2008). Therefore, in some cases, bottom-up social initiatives to cover a variety of contexts and related solutions (Ohienko, 2008) are now working better to implement projects that will help to acquire the necessary competences at any age with less bureaucracy. Technological developments and skills for creating technological innovations (as well as social innovations) should also be part of the knowledge transfer within the concept of lifelong learning.

The initiatives highlighted in this report are the case study of the "Storytelling Grandmothers", which provides insights into how the abilities of older people can be useful for education. The work aimed at improving the reading habits and skills of boys and girls from disadvantaged families is beneficial not only for society in general and vulnerable groups in particular, but also for older volunteers, providing them with a new opportunity for fruitful participation and recognition in society, in addition to traditional paid work (Schröder, et al., 2017).

In addition, the projects analysed included the following: Education for Housing Exchange (barter business model), Germany; Talent Scout (early career development), Germany; PROSA (bridging gaps in the formal system), Austria; Lernhaus (supporting holistic education), Austria; Fryhuset (engaging problem solvers in problem solving), Sweden; "Teach Me (literacy and self-realisation), Egypt; Hospedaje Estudiantil en Familia (Student accommodation in families), Bolivia; Abuelas Cuentacuentos / Storytelling Grandmothers (Intergenerational Solutions), Argentina (discussed earlier); Papinotas (Online platform for communication between teachers and parents), Chile; Jumpido (Gamification of mathematics), Bulgaria; Friluftsförbundet (Outdoor Association), Sweden; Storycrafting (participatory approach), Finland; Storytelling (Pripovijedaonic)



(anti-bullying approach), Montenegro; JAKOM (assistive technology for people with autism), Croatia; Teach for Lithuania (Improving the quality of the education system), Lithuania, etc (Schröder, et al., 2017).

Of course, this is a report on the 2015-2017 research. Since 2017, a lot has changed both in the economy and in the military and political situation in the world. Funding and spending priorities have changed. But the issue of lifelong learning has not disappeared, it continues to generate new challenges and research in this area.

In our experience, one of the options for self-realisation and self-presentation of a person can be video hosting sites such as YouTube, Tiktok, social networks such as Facebook, Instagram, video diaries, blogs. After all, the more young people trust technology and fast food, the more they lose the basic skills of care, cleaning, and cooking. This is something that has been basic for many years and remained in the "hands" of home masters. That is why this segment of the information space can be used by older people to present themselves and share their experience. Just like any young blogger or influencer. But with a significant difference - thanks to the experience of an elderly person, knowledge will be transferred in a way that is convenient for the younger generation.

However, in this case, the points mentioned in the introduction and described above are an obstacle. The individual must be ready to use technology appropriately, and if they have not acquired the relevant skills, a third party must be present to both promote ideas and help them gradually develop the relevant skills. Taking into account the questions the older person will have during the interaction and addressing them as they arise. It also lays the foundations for adult information education through timely assistance, explanations and training as requested, which will help to address each issue that hinders the development and activity of an adult. Of course, such an approach is not just individual, it is, in our opinion, specific and one-off, which is not suitable in the case of standardised lifelong learning programmes as a global concept and retraining cycle. Although, in our opinion, an elderly person, like young people, will not refuse to play with a robot on the control panel, direct a drone, or communicate with grandchildren via video.

Of course, we think that these are simple and straightforward things, and everyone can use video communication. But in fact, only a small percentage of older people have this opportunity, usually communicating via regular cellular communication (using Ukraine as an example). And the small percentage who do take advantage of video communication have a third party to help them organise the meeting. The question of the number of pensioners who can do this on their own is also ambiguous. Over time, this issue will not arise, but then the generation of pensioners we are talking about today will change.

Continuing with the topic of innovation and lifelong learning, it is worth mentioning the phrase "everything new is well-forgotten old". Thus, a person who has high intellectual development, practical skills acquired throughout life that have proven to be effective, and his or her practical advice is already an incredible basis for the education and training of a young specialist. The main thing is that respect is present on both sides and leads to the search for quality solutions using the experience of each generation. After all, every experience is a way to find successful and effective solutions in future technology projects.

### Conclusions

Through this analysis, we were able to present the best practices used in the process of implementing projects and grant support in different countries of the world; to explore the correlation between the strategies for implementing the competence framework for lifelong learning, which contain international documents and their practical implementation, including in Ukraine. In addition, the presentation of individual projects considered successful in implementing this education strategy allowed us to suggest the possibility of digitising the experience of older people, which gives us the opportunity to further search for better solutions for lifelong learning and create the preconditions for prolonging socially meaningful adult activity. In the long run, analysing the possibilities of introducing digital culture into the world of adults will allow us to change approaches to the formation of state programmes on lifelong learning strategies.

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# MODELS OF PROFESSIONAL DEVELOPMENT FOR BIOLOGY TEACHERS IN THE CONTEXT OF SOCIAL CHANGES

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**Abstract.** *This article aims to explore the impact of social changes on the professional development of biology teachers. The purpose of the study is the analysis of modern challenges in the field of education and the development of a model of professional growth of a biology teacher. The following methods are employed in the study: analysis and synthesis of literature on the research topic to determine the current state of the investigated problem, systematic analysis, and synthesis of obtained information to identify the main models of professional development for biology teachers.*

*The regulatory framework ensuring conditions for the professional development of teachers has been analyzed. Modern economic and technological changes, socio-cultural and political transformations, dynamics of interethnic and cultural relations in Ukraine, high population mobility, and migration processes affect the education system and the professional development of teachers.*

*In the scientific discourse, among effective models of professional development for teachers, scholars distinguish: concepts of teaching and development of teachers' professional abilities based on knowledge (knowledge for practice, knowledge in practice, personal knowledge); models of professional development for educators (training model, award-bearing model, deficit model, cascading model, standards-based model, coaching/mentoring model, community of practice model, action research model, transformational model); competency, cognitive, human-centered models; models of applied science, craftsmanship, reflective, apprentice-expert model, rationalist model, case studies model, cascading.*

*The author proposes an original model of professional development, which involves six stages: analysis of contemporary challenges, professional training based on teachers' needs, creation of an individual development plan, integration of innovative technologies into professional activities, self-evaluation, and the establishment and support of professional communities.*

*The main research results indicate the need to reconsider traditional approaches to teaching biology and emphasize the use of modern technologies in the professional development of teachers for successful implementation of changes in the educational environment.*

**Keywords:** *continuous learning, innovative technologies, model of professional development for biology teachers, models of professional development, pedagogical mastery, professional development environment, professional development of biology teachers, qualification enhancement.*

## **Introduction**

Ukraine, like other countries, is undergoing profound and rapid social changes that undoubtedly affect the education system and the development of teachers. These changes influence various aspects of the pedagogical sphere and pose new challenges and tasks for teachers. Modern labor market requirements force schools to adapt to the needs of the digital society. Modern teachers must possess cutting-edge technologies and methodologies to effectively prepare students for the rapidly changing world. Sociocultural and political transformations place the task of educating citizens who understand and respect diversity, can think critically, and actively engage in society. Teachers become not only knowledge mediators but also shapers of civic consciousness. The dynamics of interethnic and cultural relations in Ukraine necessitate the development of inclusive approaches in education. Teachers must be prepared to work with students from different cultures, promoting understanding and tolerance. High population mobility and migration processes create challenges for the education system as teachers encounter diversity in languages and cultures in classrooms. This requires teachers to develop intercultural competence and adapt to the needs of migrant children. All these factors highlight the necessity for continuous self-improvement and professional development for teachers. Education transforms into a constant process of adaptation and innovation, and teachers become agents of change, actively contributing to the formation of creativity, critical thinking, and readiness for social participation among the younger generation. Modern social and cultural transformations not only define a new context for education but also make the teaching profession even more responsible and crucial for shaping civil society. Teachers must be prepared for challenges, providing students with not only knowledge but also the skills necessary for successful living in the modern world.

Globalization processes have significantly impacted the societal life in the country. The need for reforms in the education sector has been relevant since gaining independence. The educational system in Ukraine has undergone a substantial transformative path, with the key aspect being the renewal of the system of professional development for teachers in secondary schools (Kurish, 2022).

## **Literature Review**

Issues of professional development models for teachers are considered in numerous scientific studies by both foreign and domestic scholars (Kennedy, 2005; Cochran-Smith, 2001; Vorotnikova, 2018; Dubasenyuk, 2018; Kovalchuk, 2015, 2018, 2017, 2020, 2021; Kurish, 2022; Pukhovska, 2011).

## **Methodology**

The research is based on the following methods: analysis and synthesis of literature on the research topic to determine the current state of the investigated problem; systematic analysis and synthesis of obtained information to identify the main models of professional development for biology teachers.

## **Research Results**

In Ukraine, a regulatory framework has been established to ensure the professional development of educators, namely: the Law of Ukraine "On Education" (articles 53, 54, 59) affirms the teacher's right to lifelong learning and academic mobility, the choice of types and forms of professional growth, and educational activity subjects (Law of Ukraine "On Education," 2017); the Law of Ukraine "On Complete General Secondary Education" (article 51) specifies that every pedagogical worker must annually enhance their qualifications (Law of Ukraine "On Complete General Secondary Education," 2020); the Procedure for the professional development of pedagogical and scientific-pedagogical workers, approved by the Cabinet of Ministers of Ukraine on August 21, 2019, No. 800, with amendments No. 1133 of December 24, 2019, regulates the right of a pedagogical worker to independently choose specific types, forms, directions, and subjects of qualification enhancement (Procedure for the professional development of pedagogical and scientific-pedagogical workers, 2019).

In the context of modern societal changes in the professional development of teachers, various innovations are introduced, such as the development of digital education. Teachers now have the opportunity to choose forms, methods, and conditions for their professional development, and models of professional development for teachers are evolving and being updated. To illustrate different approaches to building models of professional development for teachers, let's summarize the models defined by domestic and foreign researchers.

In global practice, various approaches to constructing models of professional development for future and current teachers are distinguished. M. Cochran-Smith identifies three different concepts of teaching and development of teachers' professional abilities based on knowledge: a) knowledge for practice - formal knowledge obtained by researchers outside the school (e.g., new theories of

teaching, learning, and assessment, research-based programs, etc.); b) knowledge in practice - practical knowledge accumulated by teachers through their own systematic research, improving the effectiveness of their pedagogical activities; c) personal knowledge - knowledge obtained through reflection on their own activities (Cochran-Smith, 2001).

Researcher A. Kennedy identifies several models of professional development for educators, namely:

1. Training Model
2. Award-bearing Model
3. Deficit Model
4. Cascading Model
5. Standards-based Model
6. Coaching/Mentoring Model
7. Community of Practice Model
8. Action Research Model
9. Transformative Model.

Kennedy argues that the most promising model is the Transformative Model, which describes the dominant characteristics of a transformative approach to the professional development of teachers (Kennedy, 2005). Pedagogical modeling contributes to the formation of a modern professional capable of competing in the job market by possessing necessary professional competencies. The model of a teacher's professional activity is a significant source of the content of their professional training, enhancing the efficiency of organizing and implementing the educational process. The primary goal of modeling the professional competence of a biology teacher is to develop a model aimed at improving the efficiency of the process of developing the professional competence of teachers in the system of postgraduate education and aligning it with the requirements of modern society.

Let's analyze the features of modern models of professional training for andragogy educators. The model of professional-pedagogical training for a teacher can be presented in the unity of several aspects of its application, namely epistemological, as an element of the process of cognition of this pedagogical phenomenon; general methodological, as there is a need to evaluate the connections and relationships between the components of professional-pedagogical education (cognitive, competency-based, axiological, reflective, etc.) as well as between the characteristics of their formation in the process of developing the investigated phenomenon (Berns, 2011).

O. Dubasenyuk examines the modeling of the professional development process of teachers through the lens of andragogy – adult education. Based on the principles of andragogy, we can identify the following models: competency-based, cognitive, and person-centered. Let's consider these models in more detail. The competency-based model assumes that the teacher's competency

characteristics are dominant in the structure of teacher training. The basis of the competency model is professional competence. The competency approach is aimed at developing the teacher's ability to effectively use knowledge, skills, abilities, values, and psychological characteristics of personality, as well as informational, human, and material resources to achieve goals. This approach primarily involves focusing on the learning outcomes in the practical dimension. The cognitive model is based on a diverse spectrum of knowledge used by the teacher for their own professional and personal development. The model is aimed at implementing the cognitive component in the system of professional development. The person-centered model is based on the principles of a person-oriented approach and develops qualities that are important for the professional and personal development of teachers. Coaches, methodologists, and mentors, in collaboration with teachers, should be familiar with the physiological, socio-cultural, and psychological aspects of adult characteristics. It is necessary to consider the needs of adults, including the hierarchical order of needs, as well as internal motivation, driven by the need for self-realization (Dubasenyuk, 2018).

Analyzing the peculiarities of modern models of teachers' professional training in the context of societal changes, we can add the following models to the mentioned list: Applied Science, Craft, Reflective, Apprentice-Expert, Rationalist, Case Studies, and Cascade Models (Vorotnikova, 2018).

In the Applied Science and Rationalist models, teachers learn based on scientific theories taught by experts in a specific field. Only after mastering these theories do teachers begin to practice. The advantage of these models is their consideration of acquiring new scientific knowledge. However, a disadvantage is their inability to apply "scientific" solutions to various professional dilemmas that teachers face in real classroom situations.

The artisan model is the oldest form of professional education and is still used in pedagogical education. It can be applied in conjunction with the training model. The models are based on collaboration between novice teachers and expert teachers. The artisan model is conservative, relying solely on imitation and not incorporating relevant scientific knowledge. This model does not provide opportunities for the development of teachers' creativity. The model is skill-based, focusing on general or specific methods such as interactive teaching, classroom management, student questioning, and lesson planning. Practicing teachers learn by imitating all teaching methods used by experienced teachers. Knowledge is acquired through observation, learning, and practice. Teachers can quickly imitate expert teachers (Vorotnikova, 2018). The suggested model can be used in the following ways: training - using existing algorithms, utilizing ICT (information and communication technologies); development and implementation of own teaching methodology in new conditions. Teachers repeat the algorithms proposed by expert teachers but may not understand all the advantages, disadvantages, and consequences of implementing specific methods in



specialized activities. Recent events expand teachers' opportunities by allowing them to use cloud computing technologies. This enhances the efficiency of the educational process for both students and the development of teachers' abilities. These technologies provide opportunities for resource sharing and collaboration. Thanks to cloud technologies, it is possible to improve knowledge remotely in real-time, working on shared documents, projects, and tasks (Kovalchuk, 2018; Kovalchuk, 2021).

A widely used and relevant model today is the reflective model. The reflective model is based on the assumption that teachers develop their professional competence by reflecting on their own practice. Using their experience of professional activity, teachers can plan and implement their professional development. The model consists of three stages: preparation, professional development, and professional competence. Researchers understand the reflective model as a cyclical and continuous process of development. Thus, teachers make decisions and contemplate possible actions that can be applied in their own practice. Reflection helps teachers avoid various professional dilemmas in the future by remembering, evaluating, and creatively approaching past experiences. The drawbacks of this model lie in the fact that experience is personal, not shared, not fully discussed, and not structured.

The "cascade" model is often used in postgraduate education. Knowledge is usually transmitted from experts through seminars and masterclasses. Mentoring models or coaching models are becoming increasingly popular with the development of information and communication technologies. Teachers plan their own professional development and choose the educational institution, trainer, or expert. Methodologists often act as mentors. One of the labor functions of a methodologist is the methodological support of the professional development of educational workers. Methodologists have the following tasks: organizing the process of continuous professional development of educational workers; assisting teachers in choosing forms and methods of teaching and educating learners; assisting in the development of teaching methods for lessons and extracurricular activities and improving the educational process; consulting educational workers in developing authorship educational programs, creating and publishing printed and electronic products.

When discussing models of professional development within the Ukrainian education system, it is pertinent to consider the integration of European experience in the professional development of educators. Key nuances of the European educational system include decentralization of postgraduate pedagogical education, professional development of teachers based on school needs and individual interests, active collaboration between schools and universities or qualification improvement institutions, support for teachers by university professionals, government bodies, and community representatives, diverse forms of qualification enhancement, organizational support for teachers

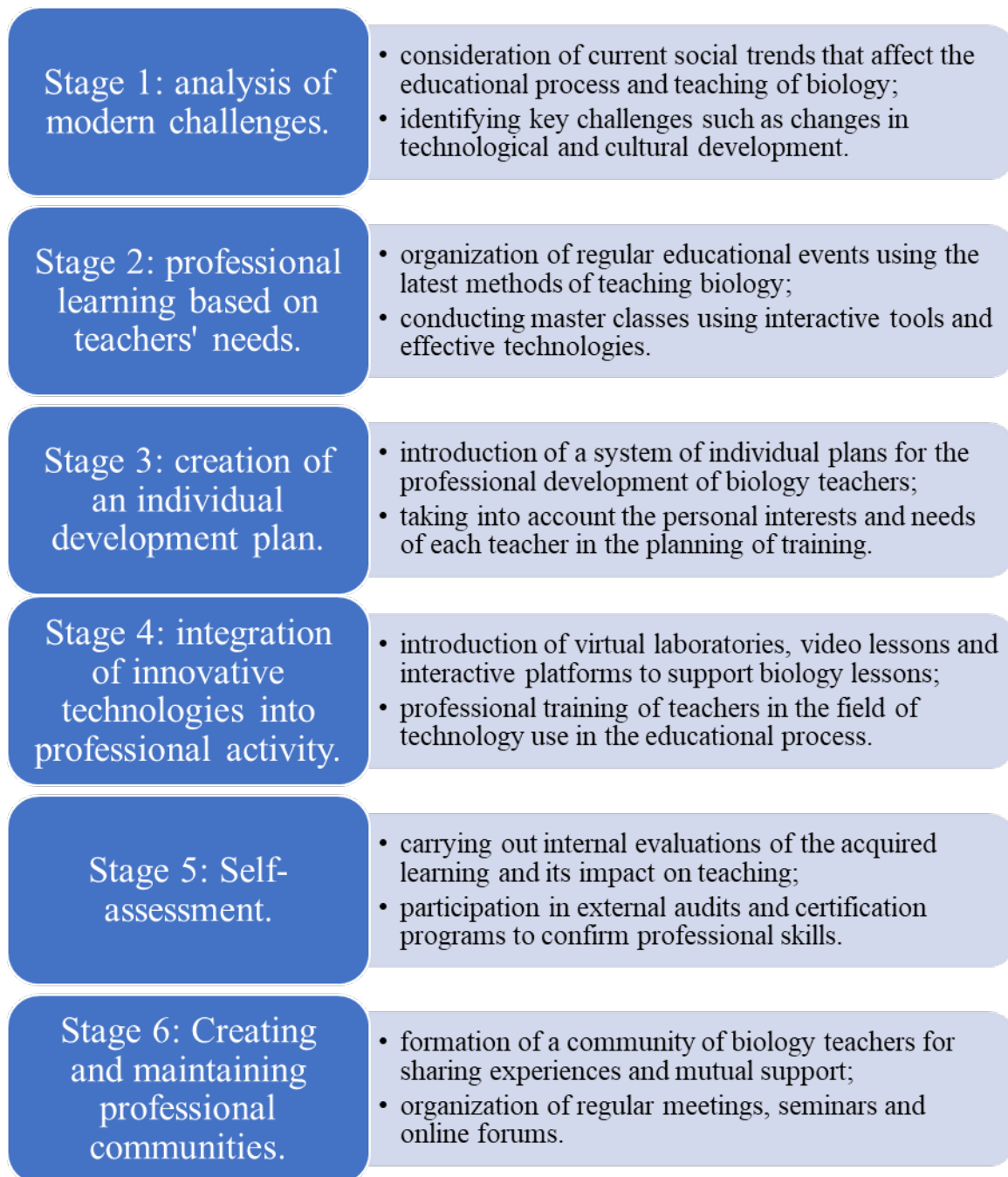
in professional development, the development of a system to incentivize educators based on qualification improvement results, the use of distance learning as an alternative form of training and retraining, and the involvement of non-governmental organizations in the professional development of educators. These steps should be taken into account when developing an effective model for the professional development of teachers in Ukraine based on their personal needs and professional growth requirements (Kovalchuk, 2015).

The analysis of scientific works allows us to propose the following model of professional development for biology teachers in the context of societal changes (Figure 1):

The proposed model aims to create a flexible and innovative environment for the professional development of biology teachers, considering the importance of adapting to modern challenges in society.

The conditions of the pandemic and war have necessitated the adaptation of most models, as society grapples with issues in education amid rapid technological and social changes, particularly in the realm of online and distance learning. In this context, the development of teachers' digital competence, digital literacy, and changes in teaching behavior through the use of online tools and services is of particular importance. When addressing the issue of modeling the professional development of biology teachers in the present, it is essential to focus on the availability of open online resources for qualification improvement, enabling teachers to ensure continuous professional development. To implement all the competencies of teachers in practice, the development of skills such as time management, communication, and technology is crucial. These skills respond to society's need for qualified personnel, the rapid development of ICT, the digitization of education, the increase in electronic resources, and certain somewhat outdated conservative views of teachers on innovative forms and methods of working with students (Kovalchuk, 2017; Kovalchuk, 2018).

It is noteworthy that some scholars point out the lack of systematicity, clear provisions, and general consensus in research related to optimal characteristics and practices for successful support of changes in teachers and students. General principles and guidelines for personal professional development are often applied to online courses and programs, but without a thorough consideration of how specific research translates into an online environment (Pukhovska, 2022).



*Figure 1 Model of Professional Development for Biology Teachers*  
(Source: compiled by the authors)

In today's social conditions, there is a need to create an environment for the professional development of teachers in every educational institution. Establishing such an environment for the professional development of biology teachers in a general educational institution is crucial given the rapid changes in science and education, requiring teachers to constantly update their knowledge and teaching approaches. Professional development allows teachers to

incorporate the latest scientific discoveries into their teaching. The high demands for the quality of education task teachers with ensuring effective teaching and upbringing methods. Facilitating the professional development of biology teachers helps improve the quality of the learning process, providing students with more qualitative knowledge in each specific educational institution. Additionally, creating conditions for professional development enhances the motivation of teachers. Participation in a community of teachers, collaborative research, and the exchange of experiences can significantly increase job satisfaction and contribute to a creative approach to teaching. Furthermore, adapting to new challenges in modern society requires flexibility and the ability to implement modern approaches in teaching. Professional development helps teachers effectively meet these demands. The environment of professional development fosters the formation of leadership qualities and teamwork among biology teachers, which can positively impact collective efficiency and the exchange of experiences.

### **Conclusions**

In the context of contemporary societal changes, such as the pandemic and the wartime situation, models of professional development for biology teachers require attention and adaptation. It is clear that the challenges associated with rapid technological and social changes demand from educational professionals deep digital literacy and the ability to effectively integrate online technologies into the learning process. The priority is the development of digital competence among teachers, as it becomes crucial for successful teaching in the conditions of distance education. However, it is important to consider that scientific research in this field requires more systematicity and consensus. The absence of clear provisions and specific principles regarding the professional growth of biology teachers in research can complicate the development of optimal practices to support teachers in implementing changes in the modern educational environment. The ability to choose models, forms, and means of professional development facilitates the process of updating knowledge and improving the skills of teachers based on their needs. In general, the development of models of professional development for biology teachers in the context of societal changes requires coordinated action among researchers, educators, and governing structures to create an effective educational paradigm that takes into account the challenges of the present. Based on the analysis of scientific works, a model of professional development of a biology teacher is proposed, which includes: analysis of modern challenges, professional learning based on teachers' needs, creation of an individual development plan, integration of innovative technologies into professional activity, self-assessment, creating and maintaining professional communities.

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# EXPLORING STAFFING PATTERNS AND MULTILINGUAL CLASSROOMS IN TEACHING JAPANESE AS A FOREIGN LANGUAGE

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**Abstract.** *Multilingual classrooms are becoming more common worldwide due to increasing mobility. Teaching foreign languages using the mother tongue in multilingual classrooms has become problematic; some of the significant concerns in Japanese language acquisition – such as the high contextuality of the language, vocabulary and kanji learning – make the direct teaching method confusing for many students, especially at the beginner and elementary levels. This article provides the preliminary results of a study carried out as a component of a more extensive empirical research project on instructional languages in classrooms teaching Japanese as a foreign language. It aims to gather, analyse and synthesise data from a survey conducted at a supranational level. The results of the first two sections of a questionnaire containing closed and open-ended questions were used for a quantitative analysis of the profile of Japanese language instructors with a focus on finding possible connections. The wide geographic distribution of the respondents (274 teachers from fifty-seven countries and regions) made it possible to collect data from a more representative sample and draw meaningful conclusions about the spread of multilingual classrooms that would be impossible in smaller-scale research. The study's primary results show the proportion of multilingual classrooms among countries in different regions and across different educational stages, the distribution of Japanese language instructors in various educational stages depending on the highest level of formal education attained, and the proportion of part-time instructors working in different academic institutions.*

**Keywords:** *Japanese as a foreign language, learning environment, multilingual classrooms, non-native Japanese teachers, teacher staffing patterns.*

## Introduction

With the increasing globalisation and interconnectedness of the world, the demand for instructors who can teach Japanese as a foreign language (JFL) has grown significantly. According to the Japan Foundation's "Survey Report on Japanese Language Education Abroad", the number of Japanese language learners worldwide has grown approximately thirty times in the past forty years, reaching 3.79 million in 2021 (The Japan Foundation, 2023, p. 7).

Nevertheless, from 2019 to 2021 the total of JFL teachers decreased by 2,731 people worldwide. The same tendency has been observed in the number of

learners, which fell by 57,060 people; also, the number of institutions has fallen by 389. Classes are overcrowded, and the number of learners per teacher averaged 50.9 people worldwide in the 2021 fiscal year (The Japan Foundation, 2023).

Furthermore, in today's diverse classrooms, teachers face the challenge of catering to the needs of students with different learning styles and cultural backgrounds (Frutas, 2023). In the contemporary learning environment, foreign language teachers must have the necessary skills and tools to teach JFL in multilingual classrooms effectively.

This article aims to investigate the characteristics of JFL teachers across various educational stages in order to gain an insight into the staffing patterns of JFL institutions, which can help determine the potential impact on the quality of education provided to students. The resulting comprehensive profile of JFL teachers was based on their background information: e.g. country of origin, age, level of formal education, study of teaching methods in tertiary education, teaching experience and form of employment (part-time or full-time).

The article also seeks to analyse the current state and trends of multilingual education and the distribution of JFL multilingual classrooms across various regions and different educational stages (the initial stage of formal education, tertiary education and non-school education).

In this study, we collected and analysed the data from the international survey "Teaching the Japanese language in multilingual classrooms – the English medium instruction approach" conducted by the authors as a questionnaire among non-native Japanese teachers. Quantitative analysis methods were primarily used to achieve the aim of the current paper.

## **Literature review**

The Japan Foundation has conducted surveys regarding institutions involved in Japanese language education since 1974. The survey report gives basic information about institutions providing JFL education, learners, motivations for learning Japanese, the status of Japanese language education and teachers. One recently added item to the survey is the data on full-time or part-time employment as a factor that impacts the quality of Japanese language education (The Japan Foundation, 2023).

It is important to analyse current staffing patterns at JFL institutions in order to understand their needs better. This can be a helpful reference for recruitment or for forecasting JFL institution needs. The concept of teacher staffing includes different elements depending on the context in which it is used. In the narrowest sense, staffing means providing employees or assistants (Kim, 2003). Ohta (2020) stated the importance of increasing the diversity of Japanese language teachers, promoting JFL teaching as a possible career path to student communities and guiding students in their career development.

This article examines the issues of JFL teacher supply and placement, focusing on geographical distribution, the form of employment (in connection with teachers' age and educational stage), work experience and the highest degree attained.

Mori et al. (2020a, 2020b) highlight that as educators, JFL teachers are responsible for creating environments where diverse students can communicate beyond their differences and learn from each other.

A learning environment is a comprehensive and natural concept encompassing both the learning process and the environment in which it occurs. This creates an ecosystem surrounding the learning activity and its outcomes (Education GPS, 2023).

The teaching and learning environment has become more multicultural than forty years ago when classrooms contained significantly fewer international students (Winch, 2016). As stated in a European Commission report entitled "Language Teaching and Learning in Multilingual Classrooms," multilingual classrooms are becoming more commonplace in many EU countries because of increasing mobility. Practitioners believe that teaching approaches must be adapted in multilingual classrooms; teachers must be aware of this and have strategies and resources to manage (European Commission, 2015).

The difficulty caused by linguistic diversity is often considered a problem for teachers. It is a common issue that teachers need to be adequately prepared to meet that challenge. Nevertheless, diversity can also be considered to be a valuable asset for education and for the long-term development of society and the economy (UNESCO & UNICEF, 2020).

Some studies have emphasised the importance of proper pre-service and in-service training programmes for JFL teachers (Moritoki, 2018). Galant (2018) mentions the lack of well-prepared JFL teachers: "Simply being a Japanese native speaker or having a degree in Japanese does not make someone a good teacher of the Japanese language" (p. 14). He is concerned that while language difficulties, learner diversity and teaching problems are all addressed in most studies on JFL teaching, none of them genuinely question the ability of teachers to teach (Galant, 2018). Others demand teachers' assistance because they are unprepared to support students' multilingual development. To implement multilingually-oriented pedagogies, teachers must be equipped with the relevant knowledge and appropriate tools (Christison, Krulatz, & Sevinç, 2021). No matter how good a teacher's pre-service education is, it cannot fully prepare them for all the challenges they will face in their career (Schleicher, 2011).

Multilingual educational settings are new working conditions that teachers need to adapt to. A multilingual classroom is one that comprises students from various cultural and native-language backgrounds (regardless of their level of proficiency) where there is no common mother tongue for teachers and all students.



The study of multilingualism and third language acquisition has greatly expanded in recent years. Multilingualism is a phenomenon that has been around for a while; however, the increasing diversity in language classrooms poses challenges for teachers in the contemporary learning environment.

Bruen & Kelly (2017) have studied the position of university language students whose mother tongue is other than the medium of instruction. They concluded that there was a need to be cognisant of increasing linguistic and cultural diversity and its impact on the language classroom. Alba de la Fuente & Lacroix (2015) studied the topic of multilingual learners and foreign language acquisition; they proposed that teachers adopt different strategies to take advantage of multilingual learners' metalinguistic awareness.

This article attempts to address some of the issues mentioned above, focusing on the staffing patterns of JFL institutions and the spread of multilingual classrooms as a new reality for teachers' working conditions.

## **Methodology**

This article is an introductory part of a more extensive study conducted worldwide among Japanese language teachers (natives and non-natives) in countries where the first language of most of the population is not English. To achieve the aim of the study, a survey in the form of a questionnaire was conducted. Cover letters (in English and Japanese) with links to Google Forms (separately for native and non-native speakers) and an anonymity acknowledgement were sent to all JFL institutions in 122 countries (The Japan Foundation, 2021). The sample was selected using the convenience sampling method. Participants were chosen based on their willingness to participate in the study and their availability during the data collection period.

The survey was piloted in August 2023 and proved to be effective in gathering the data. The full-scale survey was conducted from September 2023 to January 2024. As a result, 274 teachers from fifty-seven countries and regions comprised the current study sample.

The questionnaire consisted of twenty-six open-ended and closed-ended questions, of which nine have been exclusively used for this article. However, other questions (e.g. the respondents' age and the type of educational institution) were employed in order to discern further relationships. The article looks at data from the first two parts of the survey dealing with "education and teaching experience" and the "teaching environment", which included the teachers' background information such as their country of origin and teaching, their age and level of formal education, whether these instructors had studied foreign language teaching methods, their form of employment, their working experience as teachers, their mother tongue, their place of work and whether their class were multilingual. Although the questionnaire contained closed and short open-ended

questions, some of the latter were asked to verify the correctness of the former. For instance, in order to check the multilingual status of the class, we asked about the native language of the respondents and what native language(s) the students used in class. The collected data were primarily analysed using the quantitative method. Descriptive statistics were used to summarise the demographic data, teaching experience and ratio of full-time and part-time teachers.

### **Research results**

Table 1 provides an overview of the geographical regions where Japanese language teachers replied to the questionnaire. The list of the countries and designated regions was provided in accordance with the Japan Foundation database (The Japan Foundation, 2021). Southeast Asia (n=62), South Asia (n=59), Eastern Europe (n=43), Western Europe (n=39), and East Asia (n=32) were well represented and dominated in number. In South Asia, the country most widely represented was India (n=35). The Middle East and North Africa were represented very little. This can be partially explained by the small number of JFL institutions in these regions and the low response rate. The Middle East accounts for 0.4%, and North Africa accounts for 0.2% of all JFL institutions worldwide (The Japan Foundation, 2023). Out of twelve regions implementing Japanese language education, North America and Oceania were excluded from the study. In the frame of our more extensive analysis of instructional languages, we excluded countries where English was the language of the majority. We should also note that due to our research strategy, we received replies only from those teachers who volunteered to fill in the questionnaire.

The number of part-time teachers has increased worldwide (Beaton & Gilbert, 2013). The pros of having part-time teachers include lower labour costs for educational institutions and more flexible schedules for teachers. Academic institutions can take advantage of a broader and more varied range of skilled individuals. Additionally, part-time teachers can bring unique perspectives and experiences to the classroom. However, disadvantages of relying heavily on part-time teachers include a lack of institutional knowledge and consistency, reduced benefits and job security for teachers, and a potentially lower quality of instruction if teachers are not adequately trained or supported. Additionally, part-time teachers may not have the same level of commitment or investment in the educational institution community (students and teaching staff) as full-time teachers.

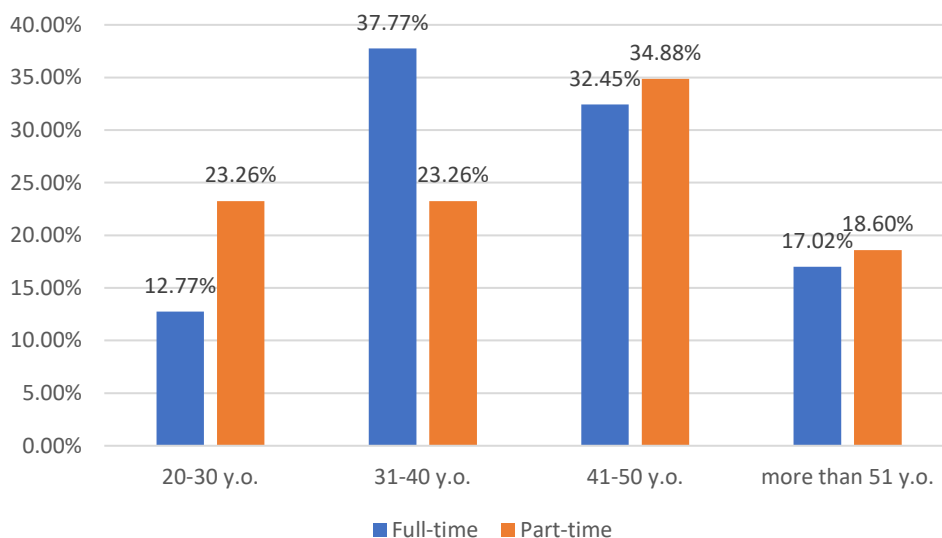
*Table 1 The distribution by geographical region and country of participants*

<b>Geographical region (n)</b>	<b>Country or designated region (n)</b>	
East Asia (32)	China (5)	Mongolia (13)
	Hong Kong (2)	South Korea (1)
	Japan (1)	Taiwan (10)
Southeast Asia (62)	Indonesia (24)	Philippines (5)
	Malaysia (6)	Thailand (11)
	Myanmar (5)	Vietnam (11)
South Asia (59)	Bangladesh (11)	Nepal (7)
	India (35)	Sri Lanka (6)
Central America (10)	El Salvador (1)	Mexico (8)
	Honduras (1)	
South America (18)	Argentina (5)	Uruguay (1)
	Brazil (8)	Venezuela (2)
	Chile (2)	
Western Europe (39)	Belgium (2)	Italy (3)
	Denmark (1)	Norway (4)
	Finland (1)	Portugal (1)
	France (7)	Spain (12)
	Germany (6)	Switzerland (2)
Eastern Europe (43)	Armenia (2)	Kyrgyz Republic (2)
	Azerbaijan (6)	Lithuania (2)
	Bulgaria (1)	Poland (4)
	Croatia (1)	Romania (3)
	Czech Republic (4)	Slovakia (3)
	Estonia (1)	Turkmenistan (3)
	Georgia (1)	Ukraine (6)
Kazakhstan (1)	Uzbekistan (3)	
Middle East (3)	Jordan (1)	Turkey (2)
North Africa (2)	Egypt (1)	Morocco (1)
Africa (6)	Côte d'Ivoire (1)	Madagascar (3)
	Kenya (2)	

*Source: compiled by the authors based on the results of the questionnaire.*  
*n=274*

Figure 1 shows the proportion of full-time and part-time JFL teachers by age. According to our results, 68.61% (n=188) of JFL teacher respondents were full-time and 31.39% (n=86) were part-time teachers. Having analysed the ratio by the age of these two groups separately, the results showed that most full-time teachers were 31–40 years old (37.77%, n=71), closely followed by the 41–50 age-range category (32.45%, n=61). Most part-time teachers were 41–50 years old (34.88%, n=30). The category of teachers who were 31–40 years old had the most significant disproportion in the ratio of full-time and part-time teachers, where the former prevailed over the latter by 14.51%. The category of respondents

over 51 years old featured participants engaged on a full- or part-time basis approximately to the same degree.



*Figure 1 The ratio of full-time and part-time JFL teachers by age*  
(Source: compiled by the authors, n=274)

The percentage distribution of full- and part-time teachers across educational stages was also important to our study because it provides insight into the current staffing patterns of Japanese language institutions and the potential impact on the quality of education offered. Understanding the proportion of full-time versus part-time teachers in different educational stages can help identify possible issues, such as overcrowded classes and a lack of resources, which may affect the quality of education. It can also help institutions plan and allocate resources to ensure there are enough qualified teachers to meet students' needs.

To further investigate the distribution of JFL teachers across different institutions and educational stages, we identified the following groups: the initial stage of formal education (both primary and secondary schools), tertiary education (colleges, vocational schools and universities), and non-school education (e.g. private language schools, lifelong educational institutions and cultural clubs).

When asked about the institutions where instructors teach, the participants were free to present multiple answers. It was found that 16.42% (n=45) of teachers worked in several institutions (different educational stages). We looked at 229 unique answers to determine the ratio of full- and part-time teachers across different academic stages, as shown in Figure 2.

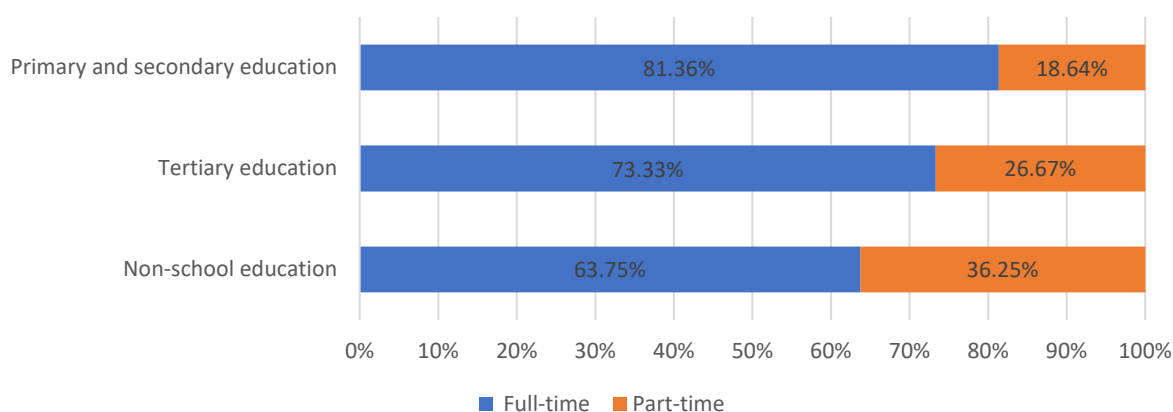


Figure 2 *The percentage distribution of full- and part-time teachers across educational stages (Source: compiled by the authors, n=229)*

On average, the most permanent contracts (81.36%, n=48) were given to JFL teachers working in the initial stage of formal education across fifty-seven countries. The second highest number of permanent contracts were issued to teachers in the tertiary education stage (73.33%, n=66). The lowest number of full-time teachers (63.75%, n=51) was in non-school education, with the highest number of part-time teachers constituting 36.25% (n=29). As a result, we can state that the full-time employment of JFL teachers prevailed through all the educational stages.

As the academic job market is changing, it is becoming increasingly frequent to come across job advertisements seeking candidates who can teach Japanese at all levels, ranging from beginner to advanced. Additionally, applicants are expected to teach culture courses about Japan. The ideal candidate should be able to contribute to the development of the programme, interact with the campus and community and pursue a progressive research agenda. Dowdle has commented on such high demands: “Such positions are beyond the training capacity of even the longest graduate program. Yet, these are the highly coveted positions sought after by an ever-growing number of freshly minted PhDs” (Dowdle, 2020, p. 384).

The percentage distribution of teachers by the highest degree attained across the educational stages is an essential aspect to consider when analysing the staffing patterns of JFL institutions. It provides insights into the qualifications and expertise of JFL teachers at different educational levels, affecting the quality of education provided to students.

Across all the educational stages, 44.53% of JFL instructors (n=122) held a master’s degree, followed by 38.32% with a bachelor’s degree (n=105) and 17.15% with a PhD (n=47). Expectedly, our results showed that tertiary education had the highest percentage of teachers with a doctorate degree (over three quarters) and the lowest percentage of teachers with a bachelor’s degree (less than one fifth) (Table 2). Teachers with master’s degrees worked twice more at the tertiary educational stage than at the initial stage of formal education. There was

no measurable difference in the percentages of primary/secondary teachers and those working in non-school education with bachelor’s degrees as their highest degree attained (39.56% and 42.86%, respectively).

**Table 2 The percentage distribution of teachers by highest degree attained across educational stages**

Educational stage	Highest level of formal education					
	Bachelor		Master		PhD	
	N=91	Total %	N=97	Total %	N=41	Total %
Primary and secondary schools	36	39.56%	23	23.71%	0	0.00%
Tertiary education	16	17.58%	41	42.27%	33	80.49%
Non-school education	39	42.86%	33	34.02%	8	19.51%

Source: compiled by the authors.

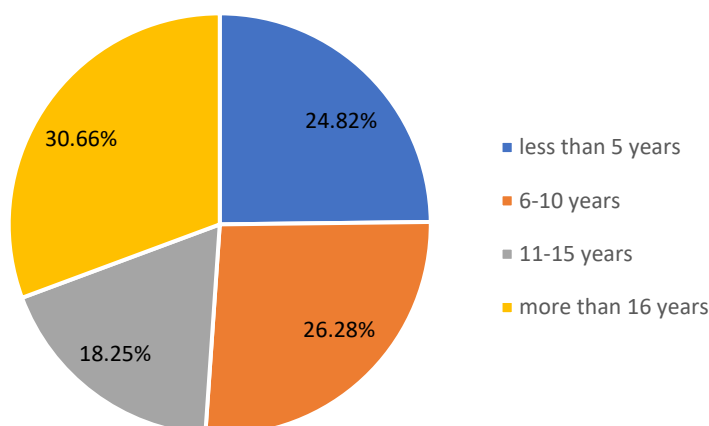
n=229

A significant percentage of JFL teachers with a bachelor’s degree at the initial stage of formal education may indicate a need for more expertise in teaching methods specific to this stage. On the other hand, a high percentage of JFL teachers with doctoral degrees at the tertiary education level indicated a higher level of expertise in teaching advanced Japanese language skills to students.

When asked whether they studied “foreign languages teaching methods” or “linguodidactics” in a tertiary education establishment, 61.31% (n=168) of the respondents answered positively.

The influence of a teacher’s experience on students’ outcomes is a topic of intense discussion and research in education (Moritoki, 2018; Galant, 2018). While many factors – such as curriculum, resources, and student engagement – can impact student success, a teacher’s experience and expertise can significantly affect the quality of instruction and the overall learning environment. It is widely believed that more experienced teachers can better manage classrooms, design effective lessons and provide individualised student support.

As for the experience in teaching among JFL teachers, we cannot state that there was a category that prevailed. The ratio of early career teachers (1–10 years) was almost equal to mid- and late-career teachers. The proportion of those relatively new to the profession was 51.09% (n=140). Experienced instructors working for over eleven years constituted 48.91% (n=134) of the teacher workforce; however, the ratio of mid-career teachers with 11–15 years of experience was the lowest (18.25%, n=50).



*Figure 3 The percentage distribution of teachers by teaching work experience*  
(Source: compiled by the authors, n=274)

In recent years, diversity and inclusion have become a major focus of academic and professional institutions (Mori, 2020a). The proportion of multilingual JFL classrooms across different educational stages is important because it reflects the current trend of language learning and teaching in diverse educational contexts. Understanding the distribution of multilingual classrooms in various educational stages can help educators and policymakers develop appropriate teaching strategies and curricula to cater to the needs of multilingual learners.

Having analysed the responses to the questions about the country of origin and teaching, we can claim that teaching in a foreign country was a rare practice for JFL non-native speakers. Out of the total respondents (n=274), only six instructors moved abroad and taught Japanese there. This accounts for just 2.19% of all respondents.

The participants were asked if they taught in a classroom where multiple native languages were spoken. The results of our study showed that 40.51% of all the 274 teachers taught in multilingual classrooms. Figure 4 shows the proportion of multilingual JFL classrooms across educational stages, considering the teachers' responses from those who indicated that they taught at one institution only (n=229). The ratio of multilingual classrooms was similar in the initial stage of formal education (45.76%, n=27) and tertiary education (43.33%, n=39). The number of multilingual classrooms in non-school education was the lowest (30.00%, n=24).

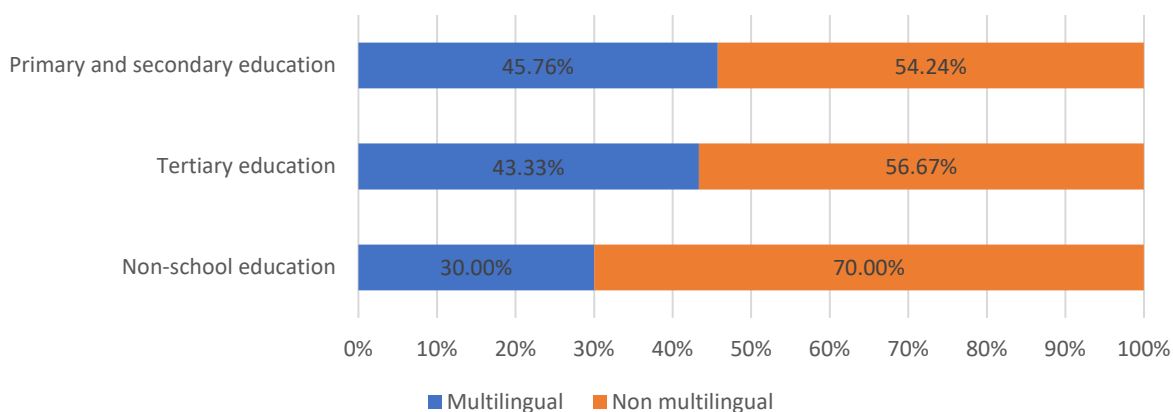


Figure 4 The proportion of multilingual JFL classrooms across educational stages  
(Source: compiled by the authors, n=229)

The geographic distribution of multilingual and non-multilingual JFL classrooms across regions is an important area to discuss. With the increasing mobility of people around the world, multilingual classrooms are becoming more common. Teaching foreign languages using the mother tongue becomes problematic in such a learning environment. This is especially the case with JFL due to its high contextuality; therefore, it is crucial to understand the current state and trends of multilingual education in JFL classrooms worldwide. Table 3 shows the distribution of multilingual and non-multilingual JFL classrooms across different regions. Central and South America, along with East Asia, had the lowest number of multilingual classes and consequently the most significant number of students from the same cultural background. Most classrooms in South Asia were multilingual (59.32%). JFL classrooms in Southeast Asia, Western Europe and Eastern Europe had approximately the same ratio: 41.94%, 41.03% and 41.86% respectively. We could not draw a logical conclusion on Africa and the Middle East as they have few JFL institutions (The Japan Foundation, 2023), and the response rate from teachers in those regions was relatively low (n=11).

Table 3 The geographic distribution of multilingual and non-multilingual JFL classrooms

Region	Total n	Multilingual		Non-multilingual	
		n	Total %	n	Total %
East Asia	32	9	28.13%	23	71.88%
Southeast Asia	62	26	41.94%	36	58.06%
South Asia	59	35	59.32%	24	40.68%
Central and South America	28	1	3.57%	27	96.43%
Western Europe	39	16	41.03%	23	58.97%
Eastern Europe	43	18	41.86%	25	58.14%
Africa and Middle East	11	6	54.55%	5	45.45%

Source: compiled by the authors.  
n=274



The spread of multilingual classrooms poses new demands on teachers. They must understand how to use bilingual and multilingual pedagogies across the curriculum to go beyond teaching language exclusively. They need to know how to make use of students' language skills (UNESCO & UNICEF, 2020).

## **Discussion**

This article aimed to gather data from the “Teaching the Japanese Language in Multilingual Classrooms – the English-medium Instruction Approach” survey, which was used to analyse the profile of Japanese language instructors and the spread of multilingual classrooms across different regions and educational stages. While conducting the study we encountered difficulties gathering data from some countries. This was the case with China, which was the top-ranked country regarding the number of JFL institutions (16.2%). When we sent our questionnaire to all the institutions there, we were notified of their inability to respond to the Google Forms via the link because of access restrictions. Although we compiled a separate questionnaire for China (Jotform) and tried to reach the Japanese teachers there again, very few of them replied; however, we received a significant number of responses from Mongolia and Taiwan, and consequently the East Asian region was well represented.

The pilot survey results showed that the teachers shared a different understanding of the meaning of multilingual classrooms. In the central survey, a short explanation of the notion was added and the relevant question was framed as follows: “Is your class multilingual? (there is no one common mother tongue for the teacher and all the students)”. Furthermore, to avoid a possible misunderstanding, there was an open-ended question if the respondent answered negatively: “What native language/languages are spoken in your class?” This helped us to find six answers where the class was multilingual even though the teacher had not stated it. In one German classroom, a teacher stated German, Italian, Spanish, Portuguese and other languages as students' native languages. In France, Turkish and Chinese were stated as native languages besides French. Such classes were deemed to be multilingual; however, seven teachers stated that English was one of the two mother tongues spoken in class (in Bangladesh, France, Nepal, Norway, Portugal, and Venezuela). Due to the high possibility of misunderstanding the question, we did not consider these classrooms multilingual, and the original negative responses were not changed.

Our study has limitations as the sample may not precisely represent the JFL teachers' population. This is why the generalised results in this article may only be further used to a certain extent.

## **Conclusions**

This article presented the results of a survey conducted among Japanese language instructors from fifty-seven countries to determine their background information, such as age, level of education, teaching experience and form of employment. The survey's primary results showed the proportion of multilingual classrooms among countries in different regions and educational stages as well as the distribution of Japanese language instructors.

The received data can be used to identify areas where further training and professional development may be required for JFL teachers. Overall, the percentage distribution of teachers by the highest degree attained across the educational stages is a crucial factor in understanding the staffing patterns of JFL institutions and ensuring the quality of education provided to students.

JFL classrooms pose a challenge to teachers because they tend to be overcrowded, and classrooms with JFL students from different cultural backgrounds have become the norm rather than the exception. It is essential to recognise that having a linguistically diverse classroom is a common issue that needs to be addressed. This study shed some light on the increasing presence of JFL multilingual classrooms. It was found that over 40% of all JFL classrooms were multilingual. Investigating the proportion of multilingual JFL classrooms across educational stages is crucial for improving the effectiveness and quality of JFL education in multilingual contexts.

JFL educational institutions require teachers who can respond to the challenges of a linguistically diverse learning environment. Newly qualified teachers might need to gain experience teaching Japanese in multilingual classrooms. Initial teacher training and in-service training should include intercultural skills, experience in multilingual classrooms and teaching students from varied backgrounds.

One implication for further research can be to discover what the best practice in multilingual classrooms might be. English as a medium of instruction has become a part of multilingual reality for both teachers and students (Linn & Radjabzade, 2020). The question arises whether Japanese should be taught solely in the target language, whether English should be used as a medium, or if a combination of Japanese, the native language and English is better.

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## JOB SHADOWING AS A METHOD IN FURTHER EDUCATION

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**Abstract.** *In response to the advanced shifts within the professional era, this study underscores the novel application of job shadowing as a medium of further education. By providing an understanding of the shifting requirements for practical knowledge in career building, this research represents the various scenarios of job shadowing for advanced professional growth. This study employed a mixed-methods approach employed quantitative surveys and qualitative interviews. The responses of 63 professionals from various industries involved in job shadowing were thoroughly analysed. The responses demonstrate the significant impact of job shadowing on acquiring skills and developing career trajectories. The respondents emphasise the importance of acquiring extensive practical knowledge, obtaining precise and reliable information about various professional job positions, and increasing their confidence to the most extent. Further, job shadowing is also helpful in expanding professional networks. This approach also contributes to a broader scenario on career-building journeys. Other than these positive outcomes, challenges were also underlined. These include a limited number of opportunities and not enough knowledge of employees in this field. This study represents the shifting position of job shadowing and recommends practical suggestions for establishing its efficiency in the professional corporate world. This study provides a detailed overview of the benefits, challenges, and solutions aligned with job shadowing. The study also highlights the important role of new strategies in further education in the recent discussion.*

**Keywords:** *Career Building, Further Education, Job Shadowing, Professional Development.*

### Introduction

In the current dynamic professional landscape, it is crucial to comprehend several career pathways and it requires unique opportunities for further education (Abe et al., 2022). In our modern era, the traditional approaches are insufficient in providing individuals with the necessary practical skills and broad comprehension needed for successful growth. This circumstance necessitates a shift towards conventional approaches. Now, the strategy requires filling the flaw between theory and real-world situations. This challenge takes the researchers to find a balanced approach for further improving education standards. As a result of this problem, one of the methods that have gained importance is job shadowing (Danijela, 2021). Understanding its relevance and novelty shows that job shadowing is a solid method to advance learning in career development. This

method helps individuals in real work scenarios by giving them a solid foundation of what professional roles require. It integrates traditional knowledge with advanced concepts to enhance continual learning and development. The objective is to comprehensively understand various practical situations and provide in-depth insights into the experiences and challenges associated with various occupations. The study highlights the critical role that job shadowing plays in the ongoing development and professional landscape. It reveals different benefits linked with this method. The research focuses on the impact of job shadowing on skill mastery and the progression of an individual's professional development. The detailed experience of the 63 professionals serving in different industries is analyzed. The study aims to understand the progressive aspect of job shadowing in shaping participants' crucial career decisions. The research aims to address the following questions: How does job shadowing impact the professional development and skill acquisition of individuals in further education? What are the benefits and challenges of implementing job shadowing as a method in further education across different industries? To what extent does job shadowing influence career decision-making among participants in further education programs?

### **Literature review**

Job shadowing has gained attention as an experiential learning method in adult further education and professional development. This literature review consolidates current research on the application, advantages, challenges, and results of job shadowing for adult individuals aiming to progress in their jobs or transition to new ones. This review seeks to clarify the important role of job shadowing in modern adult education by analysing empirical data, theoretical frameworks, and practical insights from different industries.

The basis of work shadowing in adult education is founded on experience learning theory, specifically Kolb's (1984) experience Learning Cycle. According to Kolb (1984), learning occurs when experience is converted into knowledge. Job shadowing provides a concrete chance for individuals to observe and reflect, enabling them to extract ideas from the experience and actively explore new positions (Kolb & Kolb, 2005). In addition, the concept of situated learning and legitimate peripheral engagement, as described by Lave and Wenger (1991), highlights the importance of social and contextual learning supported by job shadowing. This facilitates the complete integration of adults into a community of practice. Studies continually emphasise the diverse benefits of work shadowing in further education. (see Table 1). Firstly, it improves practical knowledge and skills directly applicable to specific job roles (Johnson & Ridley, 2017). Participants get firsthand experience of the everyday tasks, challenges, and competencies necessary in a job, which cannot be entirely replicated by textbooks or classroom instruction. Secondly, job shadowing facilitates professional

networking, enabling adults to establish valuable connections supporting their job search and enhancing their career advancement (Frost, 2016; Ryan, 2023). Thirdly, it increases individuals' confidence and clarity concerning career paths, since adults can make well-informed decisions about their professional trajectories by gaining practical experience in the actual world (Lee & Kim, 2020).

*Table 1 Potential Benefits of Job Shadowing (Danijela, 2021)*

Aspect	Findings/Impacts	References
Skill Development	It enhanced practical skills through active participation in real-world problem-solving.	Mafinejad et al., 2022
Career Development	Improved understanding of professional roles, aiding informed career decision-making.	Harrington & Earhart, 2020
Confidence Building	Job shadowing correlated with increased confidence gained through real-time application.	Diz, 2018; Martin et al., 2013
Networking	Expanded professional networks, building valuable relationships within industries.	Frost, 2016; Ryan, 2023
Organizational Impact	Job shadowing contributes to organizational development, fostering a culture of learning and innovation.	Ahmed Farouk Radwan & Sheren Ali Mousa, 2023

The benefits mentioned above are the outcomes individuals will obtain when implementing the job shadowing method. This method is strategically advantageous for one's career and personal growth trajectory. It combines traditional and innovative strategies for career and professional advancement. This helps motivate self-confidence and make professional growth and networks wisely (Harrington & Earhart, 2020).

Although job shadowing has advantages, it faces several challenges. The availability of shadowing experiences is frequently constrained, as organizations and professionals may be unwilling to dedicate time and resources to facilitate shadowing experiences (Radwan, & Mousa, 2023). Moreover, the efficacy of job shadowing relies on the host professionals' interest in guiding and actively engaging with participants (Martin & Leberman, 2018). Additionally, there is the matter of ensuring a meaningful learning experience that corresponds to the educational objectives of adult learners (Radwan, & Mousa, 2023).

The challenges and solutions are summarized and described in Table 2.

Table 2: **Challenges and Solutions** (Yoo, 2012)

Challenges in Job Shadowing	Recommendations
Limited Availability of Opportunities	<ul style="list-style-type: none"> <li><input type="checkbox"/> Actively create and advertise job shadowing opportunities (Rony et al., 2019).</li> <li><input type="checkbox"/> Implement a transparent and accessible process to address the scarcity issue.</li> </ul>
Employee Misconceptions	<ul style="list-style-type: none"> <li><input type="checkbox"/> Establish transparent communication methods.</li> <li><input type="checkbox"/> Help understand the mutual benefits for individuals, hosts, and the organization (Shan et al., 2022).</li> <li><input type="checkbox"/> Organize the workshops.</li> <li><input type="checkbox"/> Provide communication to understand the positive impact of job shadowing on career and organizational growth (Linnehan, 2004).</li> </ul>
Lack of Knowledge about Job Shadowing Advantages	<ul style="list-style-type: none"> <li><input type="checkbox"/> Increase awareness through communication and education about the benefits of job shadowing.</li> <li><input type="checkbox"/> Highlight its role in creating a learning culture within the organization.</li> </ul>
Need for Structured Program Design	<ul style="list-style-type: none"> <li><input type="checkbox"/> Provide well-structured programs.</li> <li><input type="checkbox"/> Clear guidelines, objectives, and evaluation metrics are needed for these programs (Nomakuchi et al., 2013).</li> <li><input type="checkbox"/> There is also a need for both hosts and participants to be well aware of expectations.</li> <li><input type="checkbox"/> It will help provide a more knowledgeable and fruitful learning experience.</li> </ul>

The literature review examines the impact of incorporating job shadowing into various professional development programmes. The results indicate significant improvements, suggesting crucial practical approaches, an in-depth understanding of professional knowledge, enhancing self-confidence, and an expanded professional network (Oswald et al., 2017). Job shadowing is an evolving method that reduces the discrepancies between theoretical study and real-world application. These outcomes contribute towards the person's growth and have maximum opportunities for organizational development. Comprehending this process offers a chance for further exploration and progress in its implementation.

Empirical studies reveal evidence of the efficacy of work shadowing in adult further education. A study by Gonzalez and Nunez (2019) demonstrated that job shadowing substantially impacted participants' comprehension of job prerequisites and industry norms. Furthermore, a study by English (2018) revealed that work shadowing improved career preparedness and developed a stronger professional sense of self among adult learners. Nevertheless, these studies also highlight the necessity of organised reflection and support to improve learning results.



The literature analysis supports the creation of job shadowing programs. This also facilitates the establishment of a path for well-informed endeavours that can address problems, optimise accessibility, and enhance the influence of work shadowing in assisting individuals in adapting to the newest demands of their professional journey. Moreover, the transformative impact of job shadowing establishes a solid foundation for a more adequate understanding of experiential learning in further education and the professional field.

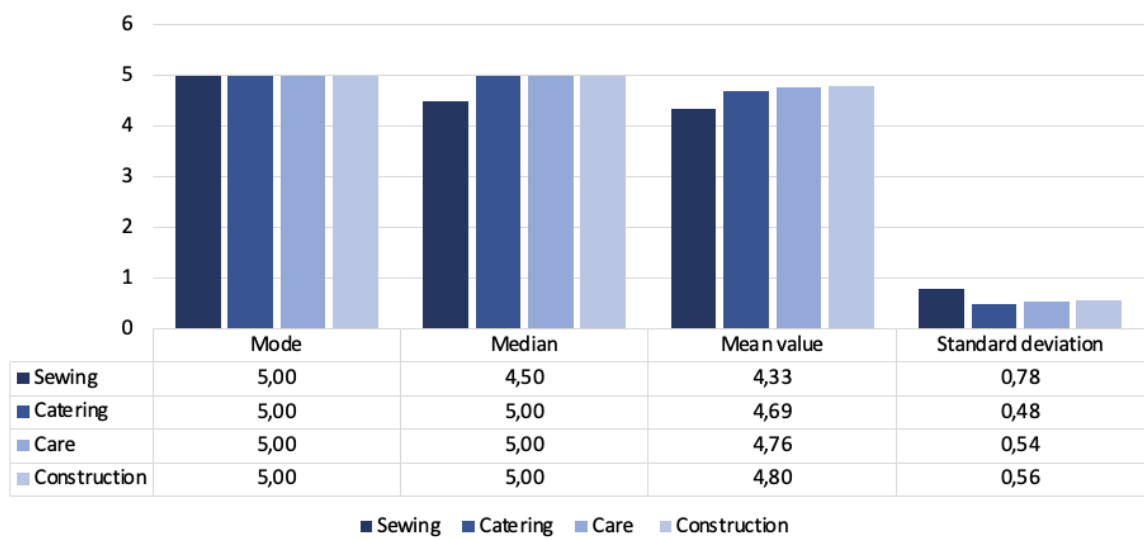
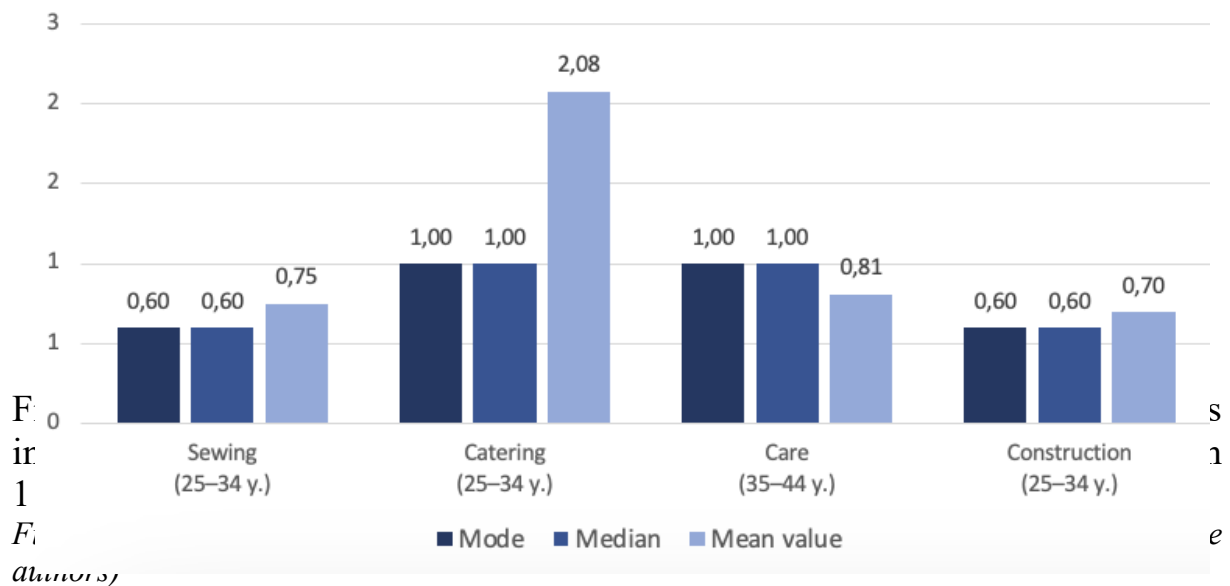
### **Methodology**

This research employed a mixed-method strategy to collect insights (Sakoda & Takahashi, 2014). The 63 professionals represented several industries: 21 respondents were from the care sector, 15 respondents were from the building industry, 13 respondents were from the catering sector, and 14 respondents were from the sewing sector. They completely understand the ins and outs of their selected career path. This method was chosen to gain insight into the participants' circumstances, experiences, environments, and perspectives surrounding the practice of job shadowing. An additional 15 interviews were carried out to enhance the depth of understanding for this study (Nomakuchi et al., 2013). The survey and questions enabled participants to highlight their experiences easily. This mixed approach makes this study helpful to gather the information strategically for this research problem. These responses were found helpful in observing the benefits and challenges associated with the problem of this research in different professional journeys.

### **Research results**

The study's quantitative phase involved analysing responses from 63 professionals across four sectors. The descriptive statistics indicate that in the Sewing and Construction sectors, the mode and median for professional experience are 0.60 years, indicating a greater prevalence of individuals with less than one year of experience. In contrast, the Catering sector exhibits a higher mean professional experience of 2.08 years, suggesting significantly more seasoned personnel in this industry. The predominant age range in most industries is 25-34, except the Care sector, which exhibits a slightly older workforce in the 35-44 age range. Figure 1 illustrates various professional experience and age distribution across different sectors, which suggests different levels of maturity and expertise in the workforce.

Figure 1 Comparison of Professional Experience and Age Demographics Across Sectors (the authors)



Each sector highly values job shadowing, with modes of 5.0, indicating that the most common response was "very effective." The mean values range from 4.33 in Sewing to 4.80 in Construction, suggesting positive perceptions. The medians are also high, with the Construction, Care, and Catering sectors all at 5.00 and Sewing at 4.50. Standard deviations are relatively low (0.48 to 0.78), indicating that responses were generally consistent within each sector. This could indicate a common perception that job shadowing is useful for developing practical skills, regardless of the sector.

Qualitative data analysis was used to understand the more profound meaning and context of the data collected. The study collected qualitative data through 15 interviews, which provided a deeper insight into the participants' experiences with job shadowing. The research systematically analysed 15 interviews, using

thematic analysis to identify recurring patterns, themes, and narratives. At first, the interviews were transcribed and carefully examined to become acquainted with the content. Subsequently, initial codes were produced by identifying and annotating relevant data characteristics associated with the research objectives. The codes were further grouped into four main themes: goals for participating, insights gained, challenges encountered, and additional comments, which represent overarching trends observed throughout the dataset (see table 3). The themes were thoroughly reviewed and revised to ensure that they appropriately reflected the information obtained from the interviews. Ultimately, the identified themes were connected to this research question, offering an in-depth understanding of the benefits and challenges of job shadowing in various industries. This methodological approach facilitated a thorough investigation of qualitative data, complementing the knowledge acquired from the quantitative phase.

**Table 3 Overview of Job Shadowing Experiences (the authors)**

Theme	Code	Quote
Goals of Participating in Job Shadowing	Exploring Work Conditions	Find out the working conditions and how quickly the work can be done
	Gaining Experience	Get new experience
	Assessing Profession Suitability	Find out if I can and will like the profession
	Learning Specific Skills	Learn about the types and execution of finishing works
	Understanding Job Roles	Shadowing a consultant to see their responsibilities
	Career Decision Making	Choose a suitable profession
Professional Development Insights	Gained Skill Acquisition	I observed all kinds of techniques
	Understanding Professional Roles	The observation gave an insight into the presence of the counselor
	Gaining Practical Knowledge	I found out whether the wallpaper should be covered with glue or the wall
	Workplace Realities	I saw how a vicar works and what the working conditions are like
Challenges Encountered During Job Shadowing	Emotional Challenges	It was a very emotional experience
	Physical Challenges	Health problems
	Adapting to Work Environment	Change of work clothes, working conditions - construction dust
	Learning New Technologies	With new construction technologies and materials
	Teamwork Dynamics	Work in a men's team
	A limited number of opportunities	There is not a large enough offer in the country for job shadowing.

	Not enough knowledge of employees and employers	I came across the fact that many people were unclear about what it all meant at the workplace where I shadowed.
Additional Comments or Experiences	Value of Shadowing Experience	Dispels doubts and stereotypes
	Skill Building	A suitable method for building skills
	Job Suitability Confirmation	I confirmed that the job is for me
	Real-World Insights	Shadowing reveals the essence of real work
	Network building	An opportunity to meet professionals in the field and create a network of like-minded people (with similar interests).

The goals of participating in job shadowing reveal various motivations, ranging from understanding working conditions to making well-informed decisions about one's career path.

The value of the job shadowing experience was highlighted, along with its role in skill building, comprehending professional roles, acquiring practical knowledge, job suitability confirmation, offering real-world insights, network building, and learning about the reality of the workplace.

Adapting to new work environments, using new technologies, a limited number of job shadowing opportunities, insufficient knowledge of employees and employers about job shadowing, and negotiating the dynamics of teamwork are the most frequently mentioned challenges that have been encountered. Additional obstacles are confronting emotional and physical challenges. According to the findings of this research, job shadowing is a diverse learning experience that provides opportunities and challenges, both of which significantly contribute to the process of professional development and making decisions regarding possible career development.

### **Conclusions and recommendations**

In conclusion, job shadowing is an essential medium for future further education as they blend theoretical learning with practical application. The study highlights its transformative potential in advanced skills, keen understanding, and expanding professional networks.

According to the research findings, work shadowing significantly promotes professional growth and career decision-making across various sectors. After examining the experiences of 63 professionals, it has become apparent that work shadowing is an efficient method for bridging the gap between theoretical understanding and actual application. Participants reported improved practical skills through hands-on experiences, greater understanding of professional roles, increased confidence, and expanded professional networks. These outcomes are

achieved by actively participating in real-world problem-solving, gaining insights into daily job responsibilities, and interacting with professionals in their field. Job shadowing includes direct application of practical knowledge, networking opportunities, and clarity in career paths. Challenges involve limited availability of opportunities, the need for structured program design, and ensuring meaningful learning experiences. Solutions proposed include creating and advertising job shadowing opportunities, establishing clear program guidelines, and increasing awareness of job shadowing benefits. Job shadowing substantially influences career decision-making by providing participants with a clearer understanding of job prerequisites, industry norms, and a stronger professional identity. This experiential learning method allows individuals to assess their suitability for different professions and make informed decisions about their career paths, enhancing their career preparedness.

Furthermore, future research could explore the longitudinal impact of job shadowing on career paths and delve into unique approaches for program implementation. As organizations continuously recognize its value, job shadowing plays an essential role in the future of experiential learning and career development.

Additionally, there is a need for developing frameworks to enhance the accessibility and quality of job shadowing experiences.

Practice recommendations include establishing partnerships between educational institutions and industries, developing structured reflection activities to accompany job shadowing experiences, and leveraging technology to facilitate virtual job shadowing opportunities (see Table 4).

*Table 4 Research recommendations (the authors)*

<b>Approach</b>	<b>Recommendations</b>
Program Design	<ul style="list-style-type: none"> <li><input type="checkbox"/> Establish clear objectives and guidelines</li> <li><input type="checkbox"/> a structured framework for shared understanding of expectations</li> </ul>
Opportunities	<ul style="list-style-type: none"> <li><input type="checkbox"/> Develop a centralized platform for job shadowing opportunities</li> <li><input type="checkbox"/> Implement a streamlined and accessible process for expressing interest</li> <li><input type="checkbox"/> Facilitate virtual job shadowing opportunities</li> </ul>
Awareness	<ul style="list-style-type: none"> <li><input type="checkbox"/> Conduct informational workshops</li> <li><input type="checkbox"/> Share testimonials and success stories</li> <li><input type="checkbox"/> Dispell misconceptions about job shadowing</li> <li><input type="checkbox"/> Gain leadership endorsement and support</li> </ul>

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# ANALYSIS OF CONSUMERS' ATTITUDES TOWARDS THE SUSTAINABLE DEVELOPMENT OF THE TOURISM SECTOR IN THE LITHUANIA REGIONS

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**Abstract.** *In the article, the author analyzes the attitude of consumers towards the sustainable development of the tourism sector in the Lithuania regions. The purpose of the research is to analyze the attitude of consumers towards the sustainable development of the tourism sector in the Lithuania regions. During the research, a quantitative survey (questionnaire survey) was conducted. Data collection methods - analysis of scientific literature and sources, document analysis, questionnaire survey. The article analyzes the consumers' attitude towards the sustainable development of the tourism sector from a theoretical point of view and presents the results of the conducted research. It is concluded that the respondents consider the following factors of sustainable development of the tourism sector to be the most important: development of ecological tourism; accessibility of tourism; creation of tourist routes accessible to all; certification of tourism services; development of the common national route and development of bicycle tourism infrastructure, etc. According to the respondents, the following problems of sustainable development of the tourism sector are usually encountered: economic problem: insufficient investments in the development of sustainable tourism; lack of knowledge about the essence and principles of sustainable tourism in local politics; underdeveloped tourism sector infrastructure, etc.*

**Keywords:** *consumers' attitudes, Lithuania regions, sustainable development, tourism sector.*

## Introduction

According to the United Nations World Tourism Organization and the World Travel and Tourism Council, tourism is one of the largest economic sectors in the world (United Nation World Tourism Organization [UN WTO]; World Travel and Tourism Council [WTTC]). The development of the tourism sector, in accordance with the principles of sustainable development and efficient use of recreational resources, can be a driver of regional economy and business development in them, as it attracts investments, creates jobs and increases income, and stimulates demand growth (Štreimikienė, Švagždienė, Jasinskas, & Simanavičius, 2020). The sustainable development of the tourism sector encourages individual regions to compete with each other in order to attract more tourists, while at the same time increasing the competitive advantages of the tourism regions, and the competitiveness of the regions is inseparable from the growth and sustainable development of the tourism sector.



*Relevance of the topic.* The relevance of the sustainable development of the tourism sector and the sustainable development of regions is reflected in strategic documents of different levels: global level, European Union level, national level and sectoral level. March 25, 2021 the adopted EU sustainable tourism strategy draws attention to the impact of the tourism sector, promoting a balanced regional structure, positive impact on regional development and preservation of biodiversity, social welfare and economic security of local communities, etc. [EU Sustainable Tourism Strategy (EU STS), 2021]. In 2014, supporting the position of the European Union on issues of sustainable development goals among the named priority areas - poverty, inequality, health, food safety, education, gender equality, water and sanitation, sustainable energy, sustainable consumption and production, biodiversity, soil poverty, sea and ocean issues (EU STS), 2021). Taking into account the situation in Lithuania, one of the main priorities of Lithuania's sustainable development strategy is moderate, sustainable economic development and regional economic development. Attention to the principles of sustainable development and sustainable regional development is reflected in the *National Progress Plan 2021-2030* [National Progress Plan 2021-2030].

*The scientific problem* of this research is formulated as a question - what is the consumer's attitude towards the sustainable development of the tourism sector in the regions of Lithuania?

The attitude of consumers/tourists towards the sustainable development of the tourism sector and their behavior was analyzed by Lithuanian and foreign researchers: Chhetri and Kumar (2022); Juška and Kinderis (2022); Li (2022); Siems, Seuring, and Schilling (2022); Ingaldi and Dziuba (2021); Han (2021); Wang, Kumar, Ruan, Saad, Garza Reyes, Kumar (2021); Çavuşoğlu, Demirag, Jusuf, and Gunardi (2020); Kuchinka, Balazs, Dan Gavriletea, and Djokic (2018), et al. The attitude of consumers/tourists to the sustainable development of the tourism sector and their behavior among young people was analyzed by the following Lithuanian and foreign researchers: Dragolea, Butnaru, Kot, Zamfir, Nuță, Nuță, Cristea and Ștefănică (2023); Alexanderova (2022); Šaparnienė, Mejerė, Raišutienė, Juknevičienė and Rupulevičienė (2022); Puiu, Velea, Udristioiu and Gallo (2022), Rennon, Peysson (2022); Zalega (2019); etc. The attitude of the local population towards the sustainable development of the tourism sector was analyzed by Akinci and Öksüz (2019) and other researchers. The attitude of tourists coming from other countries to the sustainable development of the tourism sector was analyzed by Mazhenova, Choi; Chung (2016); Stacchini, Guizzardi and Costa (2022); and other scientists.

*The object of the research* is the attitude of consumers towards the sustainable development of the tourism sector in the Lithuania regions.

*The purpose of the research* is to analyze the attitude of consumers towards the sustainable development of the tourism sector in the Lithuania regions.

*Research tasks:*

1. To carry out a theoretical analysis of consumers' attitude towards the sustainable development of the tourism sector in the regions.

2. Conduct a survey of consumers' attitudes towards the sustainable development of the tourism sector in the Lithuania regions.

*Methodology.* During the research, a quantitative survey (questionnaire survey) was conducted. Data collection methods - analysis of scientific literature and sources (performed in order to reveal the users' attitude towards the harmonious development of the tourism sector in the regions from a theoretical aspect), document analysis, questionnaire survey. The latest scientific literature and the latest scientific articles in Lithuanian and foreign languages were analyzed.

*The survey sample.* The questionnaire survey was conducted in 2023, in the months of May - June, surveying users/tourists, distributing the survey link on the portal [www.apklausa.lt](http://www.apklausa.lt) and social networks, among traveling people. 423 respondents were interviewed. The research is considered exploratory.

### **Theoretical analysis of the sustainable development of the tourism sector in the regions**

In order to achieve the competitiveness of the tourism region and when planning tourism activities in the regions, the concept of sustainable tourism development is applicable - an essential principle of future development, reaching back to 1980 and widely recognized recently. The foundations of the concept of sustainable development were formulated in 1980 in the document "World Conservation Strategy" published on behalf of three international institutions - the International Union for Conservation of Nature (IUCN), the United Nations Environment Program (UNEP) and the World Wildlife Fund (WWF), which declares that the rational management of natural resources use is an integral part not only of social development, but also of environmental protection [World Conservation Strategy (WCS), 1980]. The report of the World Commission on Environment and Development "Our common future" (1987) formulated the concept of sustainable development: "sustainable development is development that meets the needs of the present society without reducing the ability of future generations to meet their own" [Our common future OCF], 1987). Agenda 21 adopted by the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992 envisages sustainable development as the main and long-term strategy for the development of society, and the Sustainable Tourism Charter was approved at the Sustainable Tourism Conference held in Lanzarote in 1995, which the first principle indicates that tourism development must be based on sustainability criteria: long-term ecology, economic viability approach, as well as ethical and social justice towards local communities must be observed

[Agenda 21, 1992; Sustainable tourism charter (STC), 1995]. The European Union has paid and continues to pay a lot of attention to the sustainable development of tourism.

The concept of sustainable tourism, which includes the principles of sustainable development, has gained a lot of interest in recent years. In addition to economic objectives, sustainable tourism includes the assessment of environmental and social dimensions, focusing on reducing, correcting or improving negative environmental, social and economic. Finally, sustainable tourism contributes to the implementation of the Sustainable Development Goals (SDG) agenda (UNWTO and UNDP, 2017).

In promoting the sustainable development of the tourism sector, a very important role belongs to each tourism user (potential tourist), who chooses one or another form of tourism and thus shapes the supply of this sector (Dagiliūtė, & Bartkutė, 2014). It is important how each tourism user perceives and practically expresses his choices and actions, which affect the implementation of the sustainable development of the tourism sector. In order to understand the behavior of sustainable consumption, it is important to pay attention to the consumer himself and aspects related to his behavior (Juška, & Kinderis, 2022). User behavior is the various emotional, mental and behavioral reactions of a person, processes that lead to the decision to purchase or not purchase a service or product. User behavior is shaped by personal, psychological and social phenomena (Radu, 2022). Making the decision to use harmoniously depends on the desire and self-determination of the users themselves. Often, to act or consume more sustainably means paying more money or giving something up (Saari, Damberg, Frömbling, & Ringle, 2021). Sustainable consumption behavior depends on the attitude towards sustainability, the degree of intention to contribute to sustainable consumption and the desire to act, regardless of variable factors (Juška, & Kinderis, 2022). Conscious, environmentally friendly behavior when a tourist/consumer consumes products or participates in the service provision process is perceived as sustainable consumption in the tourism business (Xiang et al., 2021).

The sustainable use of tourism services requires making decisions related to limiting comfort, the obligation to protect cultural and natural heritage, and respect the local community. The sustainable use of tourism services is the behavior of a tourist, which usually manifests it through a person's internal motives, when purchasing and using a tourism product or service (Juška, & Kinderis, 2022). Motives are mostly related to being closer to nature and protecting it. In the tourism business, the concept of sustainable consumption behavior helps to reduce the negative social, environmental, cultural and economic impact by respecting and supporting the local community and its decisions (Zgolli, & Zaiem, 2018).

Consumers' expectations are changing, they show greater consumer awareness and concern about environmental issues, and they are now considered a key factor in consumer decision-making. Environmentally friendly consumers play an essential role in achieving the goals of sustainable development and contribute to the transition of companies to a sustainable business model.

### **Methodology of the survey**

*Research methodology and instrument.* The quantitative method chosen for the research is a questionnaire survey. A questionnaire of 16 questions was drawn up. In the introductory part of the questionnaire, the purpose of the study was presented, the purpose for which the collected data will be used and anonymity was ensured. Formulated questions were prepared taking into account the data of the analysis of the scientific literature. When compiling the questionnaire, groups of questions were used: a group of special questions (questions aimed at finding out how consumers understand the concept of "sustainable development", whether they themselves are responsible consumers; consumers' attitude towards the sustainable development of the tourism sector in the regions; respondents' opinion on the problems of sustainable development and the most important activities for the sustainable development of the tourism sector and a group of demographic questions (demographic and social characteristics of the respondents).

*Research ethics.* When distributing the questionnaires, ethical principles were followed (privacy, confidentiality, voluntary decision-making, etc.). Each respondent was free to choose whether to participate in the research. The data is used to summarize, preserving the anonymity of the respondents.

### **Results of survey of consumer attitudes towards the sustainable development of the tourism sector in the Lithuania regions**

*Demographic and social characteristics of the respondents.* Every third respondent (34.1 %) belongs to the 19-30 age group, every second respondent (22 %) belongs to the age group 31-40, respectively every second respondent (19.5 % each) belongs to the 41-50 and 51-60 age groups and 4.9 % respondents belong to the age group of 61 - 65 years. 80.5 % answered the questionnaire questions - women and 19.5 percent men. Almost half of the respondents (46.3 %) live in the city, 29.3 % live in a big city, 12.2 % live in the countryside and 9.8 % respondents live in a small town. Almost half of the respondents (41.5 %) have obtained a higher university education, 26.8 % - higher non-university education, 29.3 % respondents have secondary education, 2.4 % respondents have secondary - professional education. Almost half of the respondents who answered the questions in the questionnaire (48.8 %) are employees, 31.7 % respondents

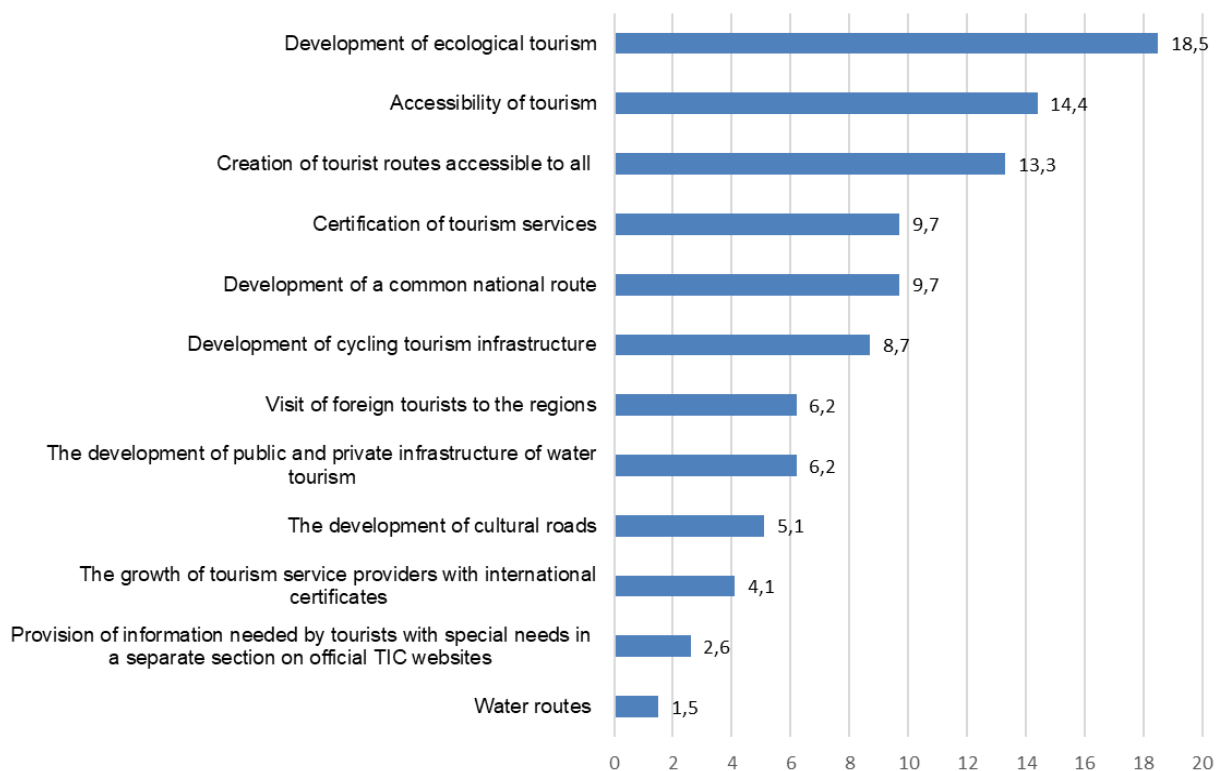
work and study, 7.3 % respondents work as officials, 4.9 % respondents are students, 2.4 % respondents are housewife. Most of the respondents (43.9%) live in the Eastern Aukštaitija region (the region includes the Anykščiai, Ignalina, Molėtai, Utena and Zarasai districts); 26.8 % respondents live in Vilnius region (the region includes the municipalities of Vilnius city, Vilnius district, Širvintos and Trakai districts); 9.8 % live in the Pajūris region (the region includes the municipalities of Klaipėda city, Klaipėda district, Palanga city, Kretinga, Neringa and Šilutė districts), respectively 7.3 % each live in the Southern Dzūkija region (the region includes the municipalities of Druskininkai, Lazdijai and Varėna districts) and in foreign countries, respectively 2.4 % respondents lives in the Nemunas Žemupis region (the region includes the municipalities of Kaunas city, Kaunas District, Birštonas city, Kaišiadorys, Jurbarkas, Šakiai and Prienai Districts) and Žemaitija Uplands region (the region includes the municipalities of Telšiai and Plungė districts). When respondents were asked how much money they spend on travel on average per year, the answers received were: four out of ten respondents (39 %) spend 501 - 1000 EUR, every third respondent (31.7 %) spends 1501 EUR and more, every second respondent (22 %) allocates up to EUR 5,000, 7.3 % allocates 1001 - 1500 EUR.

For the majority of respondents, the concept of "sustainable development" is understandable (48.8 %) or partially understood (41.4 %). They do not understand or do not know these concepts - respectively 4.9 % each. respondents. When asked to explain how the respondents understand the term "sustainable development", the respondents state that "sustainable development is economic, social and ecological development that meets the needs of the present without jeopardizing the ability of future generations to meet their own needs", "such development that meets the needs of the present", without endangering future generations, conserves natural resources", "development aimed at ensuring people's well-being", "sustainable development, including sustainability, conservation", "expansion without harming anyone (future generations, nature)", "sustainability, harmonious processes of society for well-being", "coherent, balanced regional or community development in both economic and social areas", "harmony everywhere," "this is the activity that is created and grows without harming or overshadowing the environment and those around it, providing benefits", "ecologically sustainable, does not harm the environment, uses renewable sources", "not only economically efficient, but also uses natural resources responsibly, is socially responsible, protects heritage", "is the development of a certain area combining economic, social and environmental aspects", etc. Such answers of the respondents demonstrate their knowledge of sustainable development issues.

According to the respondents, the term "sustainable development" includes responsible consumption (26.5 %), sustainability (46.3 %), saving/economy (18.5 %), resilience (7.9 %) and other dimensions (0.8 %).

Respondents were asked to identify the five most important factors for the sustainable development of the tourism sector. The answers of the respondents are presented in Figure 1, where the factors of sustainable development of the tourism sector are arranged from the factors that received the most answers from the respondents to the factors that received the least answers.

Respondents consider the following factors of sustainable development of the tourism sector to be the most important (see Figure 1): 1) development of ecological tourism (18.5 %); 2) accessibility of tourism (for people with disabilities) (14.4 %); 3) creation of tourist routes accessible to all (13.3 %); 4) certification of tourism services and development of a common national route (respectively 9.7 % each); 5) development of cycling tourism infrastructure (8.7 %) and etc. (see Figure 1).



*Figure 1 Evaluation of the most important factors of sustainable development of the tourism sector from the point of view of consumers, percent (compiled by the author based on research data)*

The respondents were asked to identify the three most important problems that are usually encountered in the sustainable development of the tourism sector. According to the respondents, the following problems of sustainable development of the tourism sector are usually encountered (see Table 1): 1) economic problem: insufficient investments in the development of sustainable tourism (21.8 %); 2) lack of knowledge about the essence and principles of sustainable tourism in local

politics (20.3 %); 3) undeveloped tourism sector infrastructure (18 %) and etc. (see Table 1).

*Table 1 The most important problems of sustainable development of the tourism sector, percent (compiled by the author based on research data)*

No.	Problems of sustainable development of the tourism sector	Respondents, percent
1.	Economic problem: insufficient investments in the development of sustainable tourism	21,8
2.	Lack of knowledge about the essence and principles of sustainable tourism in local politics	20,3
3.	Undeveloped tourism sector infrastructure	18,0
4.	Seasonality	15,8
5.	Lack of information	12,8
6.	Excessive use of natural tourism resources	8,3
7.	Unqualified tourism specialists	3,0

Respondents were asked to single out the three most important activities that are most important for the sustainable development of the tourism sector. According to the respondents, the three most important activities for the sustainable development of the tourism sector are the following: 1) investments in the sustainable development of tourism (30.4 %); 2) responsible attitude of the tourists themselves towards the use of natural resources (23.2 %); 3) legitimizing the development of sustainable tourism in the country's strategic documents (17 %) and etc. (see Table 2).

*Table 2 Distribution of the most important activities for the harmonious development of the tourism sector, percent (compiled by the author based on research data)*

No.	The most important activities for the harmonious development of the tourism sector	Respondents, percent
1.	Investments in the sustainable development of tourism	30.4
2.	Responsible attitude of the tourists themselves towards the use of natural resources	23.2
3.	Legitimizing the development of sustainable tourism in the country's strategic documents	17.0
4.	Development, planning and control of the tourism sector	15.2
5.	Increasing income of local residents	8.0
6.	Certification of tourism services	5.4
7.	Another option (recognition of the tourism sector as a priority branch of the economy)	0.8

After asking respondents whether they are interested in sustainability, conserving, responsible consumption, it turned out that the vast majority of

respondents are interested in sustainability, conserving and responsible consumption (70.7 %), 29.3 % heard about it. Less than half of the respondents (34.1 %) consume responsibly, while the majority (even 65.9 %) try to be responsible consumers as much as possible. When the respondents were asked whether they use responsibly while traveling, the majority of respondents (58.5 %) answered that they always try to use responsibly, including during travel. Less than half of the respondents (36.6 %) do not always use responsibly, but at least try to do so. 2.4 % respondents use responsibly in everyday life, but do not do so while traveling.

### **Conclusions**

1. In promoting the sustainable development of the tourism sector, a very important role belongs to each tourism user (potential tourist) who chooses one or another form of tourism and thus shapes the supply of this sector. In order to understand the behavior of sustainable consumption, it is important to pay attention to the consumer himself and the aspects related to his behavior.
2. Respondents consider the following factors of sustainable development of the tourism sector to be the most important: development of ecological tourism, accessibility of tourism and development of tourist routes accessible to all, certification of tourism services and development of a common national route and development of bicycle tourism infrastructure, etc. According to the respondents, the three main following problems of sustainable development of the tourism sector are usually encountered: economic problems: insufficient investments in the development of sustainable tourism; lack of knowledge about the essence and principles of sustainable tourism in local politics; underdeveloped tourism sector infrastructure, and etc. According to the respondents, the three most important activities for the sustainable development of the tourism sector are: investments in the sustainable development of tourism; responsible attitude of the tourists themselves towards the use of natural resources; legalization of sustainable tourism development in the country's strategic documents.

### **Acknowledgements**

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# THE ANALYSIS OF UTENA DISTRICT RESIDENTS' OPINION OF UTENA LOCAL LORE MUSEUM ACTIVITY

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**Abstract.** *In the article, the authors analyze the Utena district residents' opinion of Utena Local Lore Museum activity. The purpose of the research is to analyze the Utena district residents' opinion of Utena Local Lore museum activities and to present proposals for improving Utena Local Lore Museum activity. During the research, a questionnaire survey was conducted. Data collection methods - analysis of scientific literature and sources, quantitative research (questionnaire survey). The article analyzes Utena district residents' opinion of Utena Local Lore Museum activity from a theoretical point of view and presents the results of the conducted research. It is concluded that according to the results of the conducted research, visiting the Utena Local Lore Museum is encouraged by various entertainments, exhibitions, events and education, but, according to the respondents, all this should be related to the Utena region and its history. Repeated visits of the respondents to the museum would be determined by updated expositions, offered entertainment, and interesting presentations.*

**Keywords:** *museum activity, residents' opinion, Utena Local Lore museum.*

## Introduction

*Relevance of the topic.* Museums have long been one of the institutions most associated with tourism. Museums are understood as a part of recreation or entertainment, a non-main, but inseparable place for vacations and excursions. According to UNESCO, there are a little bit more than 103 thousand museums in the whole world. Most of them are located in Europe. As stated on the website of the Ministry of Culture of the Republic of Lithuania, in 2021 more than 100 museums were operating in Lithuania. Most of them are municipal. Despite the numbers, museums around the world are facing all kinds of problems these days. Everyone cares about how to attract more visitors, how to receive them properly, what can be offered in the current age of consumerism. In Lithuania, museums are the sector that maintains the most stable number of visitors. However, if this number is to increase, it is important to find out who and why is currently encouraging or discouraging museum attendance.

The novelty of the topic is that the role of museums changes over time, museums "evolve", but at the same time retain their essential functions. Museum visitors are also changing: if a traditional museum with regular exhibitions was enough for previous generations, visitors of modern generations (Generation Y and Z) tend to use various technologies and media in order to learn as much as possible about the museum and its offers, so museum staff need to find new ways of communication and measures. The topic is new and little researched.

*The main problem of the research* is the improvement of activities and services provided by the Utena Local Lore Museum, finding motives and reasons for visitors to visit the museum again and again.

*The object of the research* is the opinion of Utena district resident's to Utena Local Lore Museum activity.

*The aim of the research* is to analyze the opinion of Utena district residents' to Utena Local Lore museum activity and to present suggestions for improving the Utena Local Lore Museum activity.

*Research tasks:*

1. To analyze the role of museums in the tourism business from a theoretical perspective.

2. To analyze the Utena district resident's opinions to the Utena Local Lore Museum activity.

*Characteristics of empirical research.* In order to find out and analyze the opinion of Utena district residents to the Utena Local Lore Museum activity, a quantitative study was conducted - an anonymous questionnaire survey. The questionnaire was placed on the website ([www.apklausa.lt](http://www.apklausa.lt)). The link to the questionnaire survey was distributed in Utena University of Applied Sciences, among the participants of Utena Third Age University (Utena TAU), distributed in Utena's A. and M. Miškiniai library, Utena city gymnasiums, etc. 270 respondents were interviewed.

### **Analysis of the role of museums in the tourism business from a theoretical perspective**

All over the world, there are museums of various fields that meet the needs of different visitors. However, perhaps the most important thing remains to preserve history, exhibit it, adapt it for today and maintain it for the future - all of this significantly contributes to a successful tourism system. Museums, like various heritage objects, are one of the most important parts of cultural tourism, which, through cooperation, trying to reach the widest possible audience of tourists and "invite" them, becomes beneficial for both sides - the mission of the museum is consistently carried out and the needs of tourists are met.

According to Folga-Januszewska (2020), in 1911 the Scottish historian and pedagogue Lindsay wrote in his articles in the ninth edition of the British

Encyclopedia (Encyclopaedia Britannica) at the time: "the modern museum should work for the benefit of the public, be a rich source of curiosity and knowledge for the whole society". This social mission of the museum was understood as the essence of the new, then modern museum. Various previous museum activities and works led to the fact that in 1946 The International Council of Museums (hereinafter ICOM) was founded, which, during its first conference, determined the definition of a museum. However, the definition evolved over the years, adapting until finally, in 2022. In Prague, the ICOM Extraordinary General Assembly approved the proposed latest definition of a museum: "a museum is a non-profit, permanent, public-serving institution that studies, collects, conserves, interprets and exhibits tangible and intangible heritage. Open, accessible and inclusive museums promote diversity and sustainability. They operate and communicate in an ethical, professional and participatory manner, offering a range of experiences for learning, enjoyment, reflection and knowledge sharing" (ICOM, 2022). In a modern museum, you can not only look at exhibits, but also learn something, get to know history in an experiential way, with the help of various modern technologies.

In the current Law on Museums of the Republic of Lithuania (2023), the concept of a museum is defined as "a legal person or a subdivision of a legal person whose main activity is to accumulate, protect, preserve, restore, research and popularize the values of tangible and intangible cultural, historical, natural and technical heritage, in order to provide the public with knowledge, opportunities for education, studies, dissemination of creativity and quality leisure time." (Law on Museums of the Republic of Lithuania, Article 2, 2023). In summary, ICOM and the LR Museum Law describe the concept of a museum very similarly, with the main function being the collection, preservation, research and exhibition of tangible and intangible cultural heritage and its sharing with the public.

Although for a long time museums have been understood as custodians and researchers of museum values, the role of the museum has changed over time, as evidenced by the above-mentioned ICOM museum definition. It is important for the current museum to take care of culture, perform a social function in society, and contribute to its education, now the most important thing is not the museum exhibits, but the museum visitors and the community themselves.

Keršytė (2020) together with the Science and Encyclopedia Publishing Center (hereinafter MELC) states that museums are divided into "history, art, nature, science, technology, mixed, special. There are non-traditional museums: zoos, living history homesteads, heritage interpretation centers and other institutions that partially do the work of museums." Miniškevičius (2018) divides museums into art, history and natural history, science, living things (zoology and botany), landscape, work, virtual.

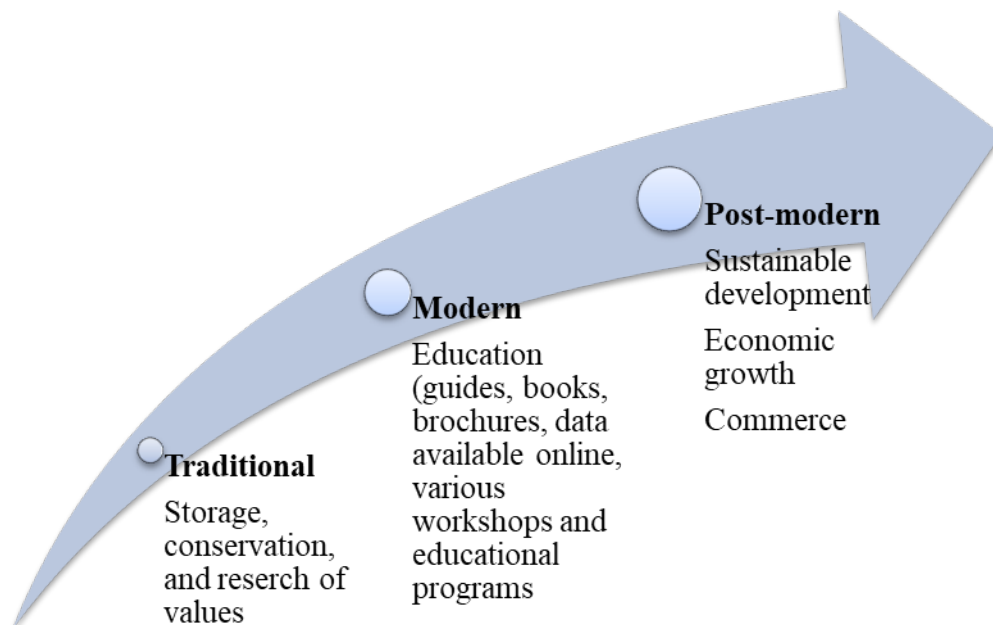
After analyzing the Law on Museums of Lithuania (2023), it is noticeable that the main classification here is somewhat different: in the Republic of Lithuania, the museum system consists of national, state, municipal, other museums and museum competence centers. Klimavičius (2018) classified museums more broadly together with MELC, who, according to the theme, divided Lithuanian museums into: architecture, literature, memorial, museums for the blind, theater, music and cinema, art, nature, history, culinary heritage, science and technology and others.

Over the years, the role of museums in society has changed: once the museum was understood as a custodian of art, history and other values, later, adapting more and more to the needs of visitors, the museum also became a public educator. Museums are no longer just a place to view art and exhibits, they have become communicative and educational institutions. According to Simon (2022), museums are constantly evolving and adapting to the changing needs of visitors. They are no longer just places to see various artifacts and works of art, but become interactive centers where people can learn about the world around them. Museums are places of discovery, community, where people can discover their creativity and imagination, come together to share their common interests and experiences (Simon, 2022).

Pop and Borza (2016) distinguish three stages of museum evolution: traditional, modern and post-modern museum (Figure 1). Traditional - performing traditional functions: collection, conservation and research, later, the functions of a modern museum were supplemented by communication with the public - educational programs, guides, various books and brochures, information stands and workshops. When the museum became post-modern, modern functions were added to the ones already mentioned: the harmonious development of the institution, economic factors and various commerce. According to Citvarienė (2014), "in contrast to a few decades ago, museums in the modern world are not valued for the diversity of their collections, the size of their funding or the modernity of their equipment, but for the significance and benefits they provide to society."

21st century museums have become more accessible than ever before. On educational programs, not only children, but also adults can learn and enjoy learning in various museums. Next to communicating with the public, another important function of the museum is adapting and evolving with technology. As they develop, museums also change, they change their exhibition spaces, they innovatively adapt to the visitor of today. The literature also emphasizes the harmonious development of modern, postmodern museums, their "responsibility". It was described and summarized in detail by Citvarienė (2014), who singled out the features of a modern "responsible" museum: the organization is aimed at the audience; communication with regular and potential audiences;

comprehensive accessibility; learning; innovativeness; preservation of long-term and diverse funding; promotion of professionalism.



*Figure 1 Evolution of museum functions  
(compiled by authors based on Pop and Borza, 2016)*

Museum communication is a field that involves working with the public to promote and 'sell' the museum and its services (Simon, 2023). The benefits of communication for museums are undeniable - if the message is well crafted, it will reach a wide audience and receive positive feedback. Nowadays, it is crucial to find ways to communicate the right message using modern technologies, the current basis of which is social media channels. As Liepuonius and Grincevičienė (2020) have argued, in order to adapt to the current challenges and changing needs of the information society, it is important for museums to adapt to an environment in which consumption and new technologies have a strong position (Guidelines for the Modern Museum, 2020, p. 54).

Motivation is the process of encouraging certain behaviours, actions, activities, caused by various motives; a set of motives (Bartoševičienė, VLE, 2019). It is known that different motivations of tourists determine the choice of type of tourism, as well as the type of museum visitors. Different people are motivated by different expectations to visit different museums. Their motivation to visit a museum can be influenced by many things: recommendations, the desire to explore and discover something new, self-fulfilment, professional activities or simply leisure time.

As Liepuonius and Laucė (2020) state, "knowing and being able to manage the factors that determine visitors' satisfaction with museum services is a cornerstone of a successful museum experience" (Guidelines for the Modern Museum, 2020, p. 32).

### **Methodology of the survey**

*The purpose of the research:* to analyze the Utena district residents' opinion to Utena Local Lore Museum activity and to present proposals for the improvement of the Utena Local Lore museum activity.

*Research method:* quantitative research - a questionnaire survey was conducted in order to investigate the Utena district residents' opinions to Utena Local Lore Museum activity.

*Explanation of the research instrument.* In order to conduct an analysis of the Utena district residents' to Utena Local Lore Museum activity, a quantitative research method was used - a questionnaire survey. The questionnaire is intended to analyze the Utena district residents' opinion to Utena Local Lore Museum activity. The questionnaire consisted of 28 questions. The questionnaire consisted of two types of questions: general demographic questions and questions reflecting the research. The questions are of both closed and open type. The age of respondents ranged from 15-18 to 65-74 years. Most respondents are 15-18 years old - 35.6 percent. A total of 71.9 percent answered women and 27 percent men.

*The survey sample.* The respondents of the questionnaire survey are residents of the Utena district or those who came from another city. The survey was conducted in the cold season, from 2022 November 29 until 2023 April 3. 270 respondents were interviewed. According to the data of the Lithuanian Statistics Department, in 2023 there were 37,555 thousand population in the Utena district. The research sample can be calculated according to Paniotto's formula:  $n=1 / (\Delta^2+1/N)$ , when:

- n- Sample size;
- $\Delta$ - Permissible error;
- N- Population size.

When researching residents of the Utena district, the research sample was calculated according to Paniotto's formula:

$204=1/(0.072+1/37\ 555)$ , when:

The population of Utena district in 2023 is 37,555;

Population size  $N=37,555$

Permissible error  $\Delta=0.07$

Study sample  $n=204$ .

Thus, according to Paniotto's formula,  $n = 204$  is a sufficient size to ensure the representativeness of the research sample.



*Research ethics.* The survey was conducted anonymously, the respondents participated in the survey and interview voluntarily and their personal data was not used. The respondents were first informed about the purpose of the survey and the fact that the answers will be used to write the thesis.

*Selection of the place and time of the research.* The survey was placed on the website [www.apklausa.lt](http://www.apklausa.lt), shared in Utena A. and M. Miškiniai library, among the students of Utena third century university (Utena TAU), Utena University of Applied Sciences, Utena Adolfas Šapoka, Dauniškis and Saulė gymnasiums and social networks. There was no time limit for answering the questionnaire.

*Explanation of research data control and processing.* During the research, data was collected on the opinion of the Utena district residents' to Utena Local Lore Museum activity. The research results are graphically displayed using the Microsoft Office Excel 2016 computer program. Descriptive statistics - percentage distributions - were used to analyze the data obtained with the help of the questionnaire survey. The questionnaire questions were statically processed by the PSPP 1.6.2 computer program.

### **Results of survey of Utena district residents' opinion of Utena Local Lore Museum activity**

270 residents of the Utena district participated in the survey, 27 percent men and 71.9 percent women, 3 percent gender not specified. The largest number of respondents (35.6 percent) were aged 15-18, having or obtaining secondary education (36.7 percent of respondents). The responses of residents of other ages were similarly distributed, from 6 to 16 percent. Also, a larger part (30.4 percent) of the subjects has a higher university education.

The first part of the questionnaire was aimed at finding out whether the respondent likes to visit museums, whether they know where the museum is, whether they have been to the Utena Local Lore Museum and/or its departments and, if so, how long ago. For those who did not visit the museum, a question was asked to find out the reasons for not visiting. The results of the survey showed that more than half of the respondents - 64.4 percent likes to visit museums. 23.3 percent indicated that they do not like visiting museums. After analyzing the results of the survey, it was noticed, that the answers of women and men to the question of whether you like visiting museums stand out: 12.6 percent men and 51.5 percent women indicated that they like visiting museums. Thus, among the respondents, women like to visit museums much more often than men.

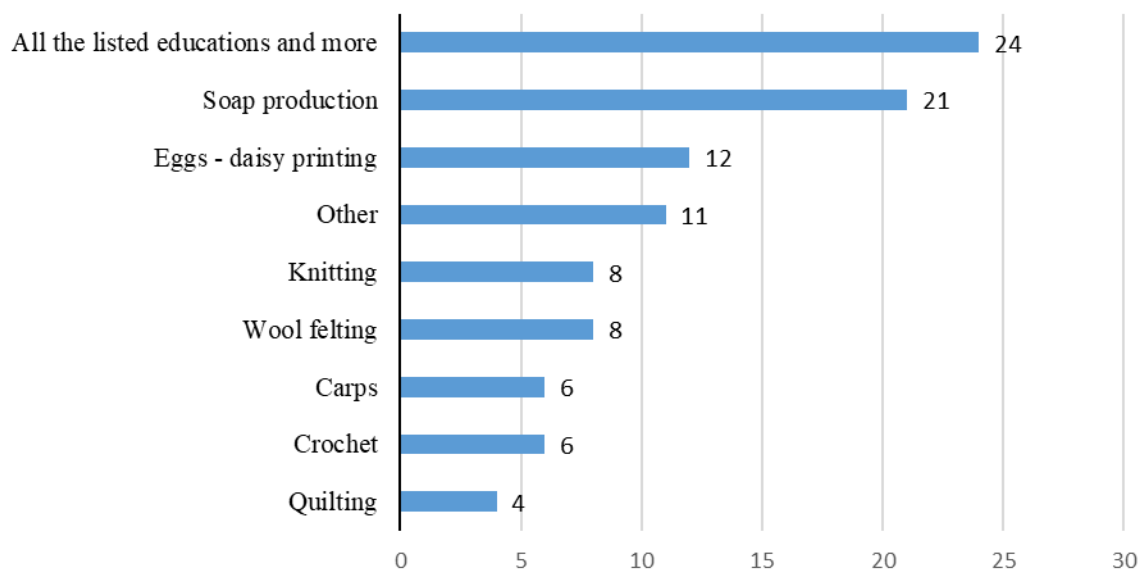
The second part of the questionnaire consisted of questions aimed at finding out the opinion of the research participants about the activities in the Utena Local Lore Museum and the factors that would encourage a visit, return to the museum repeatedly and help popularize the museum among residents and tourists.

**Table 1 Percentage distribution of factors encouraging museum visits**  
(compiled by authors based on research results)

No.	Factors, encouraging museum visits	Percent
1.	Various events are organized	16.7
2.	Meetings with various people are organized	15.2
3.	Modern entertainment is offered	14.3
4.	Various educations are organized	13.0
5.	Constantly updated exhibitions are organized	11.8
6.	All the listed activities	10.1
7.	Lectures on various topics are organized in the museum premises	9.1
8.	Lessons on various topics are organized and conducted in the museum premises	7.9
9.	Other	1.9

Table 1 shows what factors would interest or encourage the respondents to visit the Utena Local Lore Museum. These factors are important in order to find out what has been of recent interest to the residents of the Utena district, in which direction the museum could continue to carry out and develop its activities. The answers were similarly distributed, with no single answer accounting for more than 17 percent of the respondents. Most (16.7 percent) respondents would be interested in organized various events, 15.2 percent – meetings with interesting people are organized and 14.3 percent. would be encouraged to visit the modern entertainment offered in the museum. The least respondents would be motivated to visit the museum by classes organized on various topics (7.9 percent) and lectures (9.1 percent), which would be held in the museum premises, it can be assumed that these are the factors of least interest, since most of the respondents are school-aged Utena residents of the district, who may have already been in the premises of the museum, and have not yet been involved in the lectures for students. In summary, most respondents are interested in organized events, meetings, modern entertainment in the museum, and least interested in lessons and lectures.

Figure 2 shows the answers of the subjects about the educations of interest that would be organized in the museum premises. Most of the respondents indicated that they would be interested in all the listed educations and even more (23.6 percent). It was found that soap production is the most interesting of the listed educations (20.5 percent). It can be assumed that the respondents are interested in a variety of educations, since the choice of other listed educations was similarly distributed. Also, in the answer variant of the question "other", a large part of the population mentioned the importance of linking education with the history of the region, and this was also mentioned in another question about interesting entertainment organized in the museum premises.



*Figure 2 Interesting educational activities organised in the museum's premises (percent).  
(compiled by the author based on research results)*

Respondents were asked about what activities would help to popularize Utena Local Lore Museum among residents and tourists. It was possible to choose from 1 to 6 options. The majority of respondents (23.8 percent) would agree with the inclusion of visits to the museum and its departments in the routes organized by the Utena Tourism Information Center (TIC). It can be assumed that the residents have been missing this thing lately. Although in the previously examined answers about the factors that interest and encourage a visit to the museum, a small part was in favor of conducting classes or lectures in the museum premises, but when asked what activities would help popularize Utena Local Lore Museum, the greater part (23.2 percent) would also be in favor of conducting classes on various subjects in the museum. 90 (18.2 percent) respondents agree that all the listed activities would help popularize the museum among residents and tourists. The least (13.7 percent) were in favor of information flyers in mailboxes, on billboards and elsewhere. This can be attributed to the growing public awareness of responsible consumption and environmental damage (advertisement printing, distribution, etc.).

In order to find out the reasons why visitors would return to the museum repeatedly, 9 answer options were provided; the respondent could choose several of them. For all the listed reasons, 13 percent would return to the museum again of the respondents. It was found that the surveyed people are most likely to return due to renewed exposures (19.1 percent). Examining the options recorded by the respondents themselves, a recurring option was noticeable regarding the connection of all the activities offered by the museum with the Utena region, history and craftsmen of this region, one of the answers states: "because of the lectures given by famous historians, art critics, etc., because of the artists who

came from the Utena region, exhibitions". Due to the offered entertainment, almost 4 percent would return to the museum repeatedly fewer respondents than for renewed exposures. This can be attributed to the large number of respondents who have already been to the museum, because after visiting once, they want news for the next time. 14.9 percent of respondents would return to the museum repeatedly if there were interesting presentations/narratives, a similar number (14.1 percent) would return for organized educations. Those surveyed are the least likely to return to the museum repeatedly because of interesting installations (10.2 percent) and because of organized painting exhibitions (9 percent).

Summarizing it can be said that organized events, meetings and modern entertainment would encourage respondents to visit the museum. When choosing the educations and entertainments of interest, the majority of the respondents were in favor of all possible and listed educations and entertainments, so it can be said that the respondents would visit the museum if it offered various educational and entertainment activities. Regarding the popularization of Utena Local Lore Museum among residents and tourists, the respondents mostly supported the idea of including visits to Utena Local Lore Museum and its departments in the routes organized by the Utena Tourism Information Center. After finding out the reasons why the respondents would return to the museum again and again, it is realized that the most desired is the renewal of already seen expositions, entertainment, presentations and stories.

## **Conclusions**

1. Museums are an important part of cultural tourism. For a long time, museums were seen as guardians and explorers of museum treasures, but the role of the museum has changed over time. Today's museums are about cultural, social and educational functions in society, but it is not the museum's exhibits that are most important, it is the visitors and the community. Therefore, it is becoming a critical function of the museum to evolve with technology and innovatively adapt to today's visitor.
2. There are 14 museums operating in the Utena district, which also include learning centers. Museum expositions are in one way or another related to the history, culture, crafts, arts of the region, museums offer education and familiarization with the activities organized by them, visitors are invited to various events. The results of the conducted research showed that visiting the museum is encouraged by various entertainment, exhibitions, events and education. However, according to the respondents' suggestion, all this should be related to the Utena region and its history. Repeated visits of the respondents to the museum would be determined by updated expositions, offered entertainment, and interesting presentations. Respondents indicated that they would like more various presentations and other museum

exhibitions when the museum renews its services, and also agreed that a visit to the museum should be included in the routes and excursions organized by Utena Tourism Information Center (Utena TIC).

### Recommendations

1. The education, services and entertainment offered at the Utena Local Lore Museum should be related to the region of Utena and its history.
2. It is proposed that the museum should continuously update its exhibitions, offer interesting presentations and various activities for visitors.
3. The services should be updated and various presentations and exhibitions from other museums should be organised.
4. A visit to the museum should be included in the itineraries and excursions organised by Utena Tourism Information Center (Utena TIC).

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# IMAGE OF AN INTEREST-RELATED EDUCATION TEACHER: PERSPECTIVES FROM HEADS OF EDUCATION INSTITUTIONS

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**Abstract.** *This article analyses the professional and personal qualities of interest-related education teachers, their impact on students and relationships with students, based on the results of a survey of 178 heads of educational institutions. The findings reveal that most heads believe that teachers are usually accurate and timely in their actions, build good relationships with students, and are not too harsh with them. In addition, the heads of the institutions are aware of the potential problems in the learning process and are ready to address these problems. These conclusions reflect the important role of interest-related education teachers in the learning process and point to the need to further develop teachers' professional and personal qualities in order to ensure an effective learning environment and student development.*

**Keywords:** *image of a teacher, impact on students, interest-related education, teacher's professional qualities.*

## Introduction

The teacher is always perceived as the embodiment of morality, the ideal example for his students (Kestere, Kalke, 2018). Researchers Iveta Kestere and Baiba Kalke remind us that asexuality and modesty are an eternal ideal of a teacher. Sexuality and pretense have always been taboo in the teaching profession. Researching modern teachers in Latvia, researchers conclude that the image of a teacher in society changes slowly and, in many ways, corresponds to the traditional image. For example, students describe the typical teacher as modest and inconspicuous (Kestere, Kalke, 2014). A modern teacher is expected to behave democratically but must also be intellectually superior to his students (Kestere et al., 2012).

To analyse the teacher's image, the following criteria are often put forward: the teacher's gender, age, appearance, voice, mimicry, gestures, positive and negative features of the teacher's character and actions (Kalke, 2008; Kestere, Kalke, 2014). In 2022, 39,041 teachers of general education, vocational education, preschool education, and special education worked in the Latvian education system, of which 36,218 or 92.8% were women (Centrālā statistikas pārvalde, 2023). The ideal age of a teacher, from the perspective of students, is between 30 and 50 years old (Kalke, 2008). Among all teachers, there are 8,097

or 20.7% under the age of 34, 23,075 or 59.1% in the middle age group, and 7,869 or 20.2% seniors (60 and over) (Centrālā statistikas pārvalde, 2023). The teacher's clothing is classic – most often a suit in dark colours, shoes or boots with a low heel, accessories – glasses, a watch, a handbag. The teacher's voice is loud, calm, determined and the diction is clear. Teachers speak literary correctly, without colloquial words. Teachers express their anger with a louder, threatening voice. In non-verbal communication, the teacher uses gestures, but mimicry is characterized as revealing both positive and negative emotions (Kaļķe, 2008; Ķestere, Kaļķe, 2014; Ķestere et al., 2012).

These several perceptions helped to create an image of the general teacher in Latvia. The aim of the case study was to create an understanding of the different aspects of interest-related education by creating an image of a teacher as seen by the head of the institution. For this purpose, four perspectives of the objective image of a teacher, as described in the theoretical part, were mapped against the different aspects of the work of interest-related education teachers that can be observed and analysed by the head of the institution. The author expects that the results highlight the importance of creating a supportive and dynamic environment to enhance student learning and promote the holistic development of students in interest-related education programmes.

### **The Image of a Teacher**

Sandra Chang-Kredl and Daniela Colannino (2017) examined social media discussions between 2009 and 2015 about the “best” and “worst” teachers, specifically using the Reddit discussion platform. The best teachers were found to know their subject matter and how to teach it, had personal qualities that were admired by students, were caring in their relationships with students, and had a lasting impact on a student's life. Four general themes emerged in the research on (Chang-Kredl, Colannino, 2017) how to represent the data more objectively:

- the teacher's professional qualities,
- the teacher's personal qualities,
- the relationship between teacher and student,
- the impact on students, namely, the consequence of the teacher's approach to the student's learning, performance, and self-confidence.

#### *Teacher's professional qualities*

Different students have different learning styles and therefore different teaching styles are needed to be effective. Indeed, some students adore a teacher who challenges them, while other students find this style intolerable. The worst teachers were unqualified, dishonest, or incompetent in their teaching skills (Chang-Kredl, Colannino, 2017). A teacher's ability to fulfil any role during the lesson is part of their professionalism. Unexpected situations in the learning



process can be noticed and used for the benefit of students. The teaching profession requires a positive attitude (Jankovska, 2010). Students highly value the professionalism of teachers and at the same time they are usually intolerant of the incompetence of adults (MacPhail et al., 1973). Teachers no longer just stand in front of students at the blackboard, they tend to walk between rows, sit among students, and work with individual groups of students (Kestere et al., 2012).

### *Teacher's personal qualities*

Students want to see teachers as individuals with their desires, interests, and abilities (Jankovska, 2010). A study in Australia noted that among the teacher attributes offered by students who achieved the best in school, the concepts of care and trust were the most important (Lovat, 2009). The teacher's personal characteristics, often indicative of eccentricity, were interpreted in both positive and negative ways. Admired as unique, the best teachers were distinguished by their creativity, innovation and quirks that made them quite memorable. Their personal quality was linked to the professional: the students were still learning. Worse teachers had unpleasant personality traits. The worst teachers cited as unique did not have effective practices to compensate for their odd behaviour (Chang-Kredl, Colannino, 2017). The most frequently mentioned positive features of a teacher's character and actions are understanding, helpful, responsive, knowledgeable, smart, able to teach, with a sense of humour, patient, restrained, friendly, kind. As negative features – hard, harsh, tense, biased, intolerant, boring (Kaļķe, 2008). Teenagers expect higher standards from teachers than from themselves (MacPhail et al., 1973). The worst teachers experience mood swings throughout the day. The fatigue often observed among teachers could be the result of long hours, bureaucratic paperwork and poor pay (Kestere et al., 2012).

### *Relationships between teachers and students*

Good teachers are those who were generally friendly and with whom students spent time outside of school. The best teachers make an extra effort to build relationships with their students. The worst teachers were careless or abusive in their relationships with students (Chang-Kredl, Colannino, 2017). If a teacher is not interested in work, the desire to work cannot be asked of students (Jankovska, 2010). Students were disappointed that teachers did not provide support when needed. The teacher should not hinder the students' discovery by talking too much, too early, too often, but it is not equivalent to adopting a permanent neutral position (MacPhail et al., 1973). A teacher's life is quite lonely, and his workday is busy, making him tired and building strained relationships with students (Kestere et al., 2013).

### *Impact on students*

A study by MacPhail and co-authors (MacPhail et al., 1973) showed that 70% of fifteen-year-old elementary school graduates want the school to, first, provide an understanding of what determines whether performance is good or bad, and, second, help them find solutions to difficulties in relationships between people. The mission of the teacher today is similar to the mission of the past – to guide students through knowledge with life wisdom and experience (Jankovska, 2010). Bad teachers have no long-term future impact on students (Chang-Kredl, Colannino, 2017). However, in general, negative experiences at school tend to be brighter and harder to forget. Thus, memories of a typical teacher can become a common picture of the mistakes made by many teachers (Kestere et al., 2013; Kestere et al., 2012).

## **The Image of a Interest-Related Education Teacher**

The author conducted a survey in 2016 among the heads of institutions where interest-related education programs are provided, including questions about the professionalism and personal characteristics of interest-related education teachers. The survey used quantitative data collection methods. Secondary qualitative and quantitative data from other studies were also used.

According to the Ministry of Education and Science of Latvia, 872 institutions provided interest-related education in the 2016/2017 school year (Izglītības un zinātnes ministrija, personal communication, July 14, 2017). Questionnaires were sent to the official emails of all institutions. The heads completed the questionnaire in Google Forms. In total, 178 heads of institutions responded. The data obtained were anonymised and further analysed in aggregated form. The author is aware that the heads of institutions can feel internal pressure when answering questions about their institution. Therefore, they may avoid or feel uncomfortable revealing sensitive information about the institution's problems.

It can be seen from Table 1 “Professional qualities of teachers of interest-related education” that the heads of institutions mostly agree with Statement 3 “Teachers regularly improve their professional competence”, which is not surprising at all, because this is a legislative requirement: every practicing teacher also needs to undergo professional qualification improvement programs, the amount of which is not less than 36 hours in 3 years. (Ministru kabinets, 2018). However, a third of the heads only partially agree with this statement. Future research can reveal whether heads do not see the point of existing courses in terms of content or do not feel the results in interest-related education work. In other statements, the option “totally agree” does not reach even 50%. It is possible that for Statement 1, “Teachers work with enthusiasm,” the heads mostly “partially agree” due to the above-mentioned teacher fatigue and bureaucratic elements of

work. As to Statement 4 (try a novelty in the learning process) and Statement 5 (apply a well-known thing in the learning process), 2/3 of the heads of institutions partly agreed, however, there were sharp differences in other answers: 1/3 of the heads are convinced of teachers' willingness to try new methodologies, and only 16.3% fully agree that teachers prefer known techniques. Three statements (6, 7 and 8) relate to teachers' willingness and ability to share their experiences and gain a broader vision. While 41% of the heads of institutions are convinced that their institution's teachers share good practices and experiences, only 29.2% agree that interest-related education teachers participate in methodological commissions. However, 56.2% of the heads reveal that teachers in their institutions are not involved in the European Union's teacher mobility programs.

Table 1 *Professional Qualities of Interest-Related Education Teachers* (made by the author)

#	Statement	Value (Frequency / Percent)		
		Disagree	Partially agree	Totally agree
1	Teachers work with enthusiasm	4 / 2.2	95 / 53.4	79 / 44.4
2	Teachers appreciate academic achievements	4 / 2.2	112 / 62.9	62 / 34.8
3	Teachers regularly improve their professional competence	4 / 2.2	58 / 32.6	116 / 65.2
4	Teachers are interested in trying out new methodologies and teaching techniques	3 / 1.7	118 / 66.3	57 / 32.0
5	Teachers prefer known methodologies and teaching techniques	30 / 16.8	119 / 66.9	29 / 16.3
6	Teachers share good practices and experiences	9 / 5.1	96 / 53.9	73 / 41.0
7	Teachers actively participate in the work of methodological commissions/associations	17 / 9.6	109 / 61.2	52 / 29.2
8	Teachers involve in the European Union's teacher mobility programs	100 / 56.2	61 / 34.3	17 / 9.5

From Table 2 it is possible to draw conclusions about some individual personal qualities of interest-related education teachers. A general Statement 9 on teachers' high moral principles was fully agreed to by almost 50% of the heads of institutions. The answer "partially agree" – here and elsewhere – may indicate problems in a certain area or that the head sees the teachers of his institution as people, rather than an idealized image of teachers. Statement 10 about teachers' sociability, loyalty to the workplace reveals that only a third of the heads of institutions are absolutely convinced that teachers voluntarily participate in the activities of the institution. Statements 11 to 13 relate to patriotism, which begins with a sense of belonging to the local place. Half of the heads strongly agree that interest-related education teachers are proud of their institution, less are willing to claim that they are proud of their city and county or their country. The survey took place before the Russian war against Ukraine, so patriotism was not in the first line.

**Table 2 Personal Qualities of Interest-Related Education Teachers (made by the author)**

#	Statement	Value (Frequency / Percent)		
		Disagree	Partially agree	Totally agree
9	Teachers have high moral principles	3 / 1.7	92 / 51.7	83 / 46.6
10	Teachers voluntarily participate in institution activities	8 / 4.5	102 / 57.3	68 / 38.2
11	Teachers are proud of their institution	1 / 0.6	89 / 50.0	88 / 49.4
12	Teachers are proud of their city or county	1 / 0.6	106 / 59.6	71 / 39.9
13	Teachers are proud of their country	4 / 2.2	99 / 55.6	75 / 42.1

The impact of interest-related education teachers on students (Table 3) was measured by learning objectives, as opposed to purely learning achievements, and whether they were complemented by the development of students' skills and virtues. 22.5% and 18% of institution heads are convinced that teachers are focused on maximum achievement (Statement 14) and students' knowledge and skills (Statement 15). About as many heads see that teachers apply learning standards to the level of students and their needs (Statement 16). The following goals of teachers correspond to the definition of interest-related education: the law on education defines that interest-related education ensures the implementation of a person's individual educational needs and desires, regardless of age and previously acquired education. (Saeima, 1998) In turn, 30.3% of the heads of institutions are convinced that the teachers agree that the goal of learning should be both the acquisition of skills and knowledge and the development of students' social and emotional skills (Statement 17). A third of the heads undoubtedly agree with Statement 18 that teachers of interest-related education consider that "the development of students' virtues is as important as the acquisition of their skills and knowledge in classes".

**Table 3 The Impact of Interest-Related Education Teachers on Students (made by the author)**

#	Statement	Value (Frequency / Percent)		
		Disagree	Partially agree	Totally agree
14	There is a consensus among teachers that learning achievements should be kept at the highest possible level	26 / 14.6	112 / 62.9	40 / 22.5
15	There is a consensus among teachers that developing students' skills and knowledge is the most important task of the lessons	21 / 11.8	124 / 69.7	33 / 18.5
16	There is a consensus among teachers that it is best to adapt learning standards to the level of learners and their needs	30 / 16.8	113 / 63.5	35 / 19.7

17	There is a consensus among teachers that the development of students' social and emotional skills is as important as the acquisition of their skills and knowledge in classes	8 / 4.5	116 / 65.2	54 / 30.3
18	There is a consensus among teachers that the development of students' virtues is as important as the acquisition of their skills and knowledge in classes	10 / 5.6	109 / 61.2	59 / 33.1

If in the previous questions, there was an opportunity to look at the personality of interest-related education teachers through more general statements, Tables 4–7 summarize the results when the heads of institutions had to answer whether teachers are subject to certain disruptive factors. Not surprisingly, 55% of the heads agreed with Statement 19 (“Teachers teach students with different abilities in the same group”) because interest-related education groups include students, regardless of their skill and ability level. However, it is unfortunate that it is perceived as a learning-hampering factor. 50% of the heads of institutions are convinced that teachers of their institutions have no difficulties when it comes to teaching students of different ethnic backgrounds in the same group (Statement 20). Latvia is a multinational country where such a situation is not uncommon, however, for a third of the heads it is a small but disruptive factor, but for 16.8% – a certain level or a very great difficulty. Only 11.2% of institution heads are distracted by teachers resisting change (Statement 21), and 39.4% believe that this problem concerns them very little. For the most part, interest-related education teachers are prepared for their classes (Statement 22), however, 38.2% of the heads find that this interferes with the classes very little.

Table 4 *Disruptive Factors: Professional Qualities of Teachers* (made by the author)

#	Statement	Value (Frequency / Percent)		
		Does not concern	Concerns very little	Concerns somewhat + very much
19	Teachers teach students with different abilities in the same group	16 / 9.0	63 / 35.4	99 / 55.6
20	Teachers teach students of different ethnic backgrounds in the same group	90 / 50.6	58 / 32.6	30 / 16.8
21	The institution's staff resists change	88 / 49.4	70 / 39.3	20 / 11.2
22	Teachers are not well prepared for class	101 / 56.7	68 / 38.2	9 / 5.1

Only two examples of teachers' personal qualities that interfere with the lessons (Table 5), which concern accuracy, are highlighted. These two things can be easily detected and observed by the heads of institutions. In Statement 23, 70.8% of the heads do not observe absenteeism of interest-related education teachers, and a quarter of them admit that this disruption has very little impact on

work. In Statement 24, 2/3 of the heads of institutions do not find delays in the start of teacher classes and 28.1% see very little difficulty in that.

*Table 5 Disruptive factors: Personal Qualities of Teachers (made by the author)*

#	Statement	Value (Frequency / Percent)		
		Does not concern	Concerns very little	Concerns somewhat + very much
23	Teacher absenteeism	126 / 70.8	44 / 24.7	8 / 4.5
24	Teachers delay the start of classes	119 / 66.8	50 / 28.1	9 / 5.1

Two questions were used to understand the institution heads' perception of the relationship between teachers and students (Table 6). Poor student–teacher relations (Statement 25) were observed by 7.9% of the heads and 43.8% found it to be a very small problem that could interfere with classes. The fact that interest-related education teachers treat students too harshly (Statement 26) was found by only a few heads of institutions and is indicated by 47.8% of respondents as a very small problem.

*Table 6 Disruptive Factors: The Relationship Between Teacher and Students (made by the author)*

#	Statement	Value (Frequency / Percent)		
		Does not concern	Concerns very little	Concerns somewhat + very much
25	Poor student–teacher relationship	86 / 48.3	78 / 43.8	14 / 7.9
26	Teachers treat students too harshly	85 / 47.8	85 / 47.8	8 / 4.5

Disruptive factors that may impact students are summarized in Table 7. Approximately half of the heads believe that Statements 27 to 29 do not apply to their institution, and yet more than a tenth of the surveyed heads of institutions admitted that each of the factors is to some extent and very disruptive. About 40% of the heads admitted that in very rare cases interest-related education teachers do not respect the individual needs of students and also have little expectation from their students, 34.8% – assume that it is rare, but there are situations when students are not encouraged to develop their higher abilities.

**Table 7 Disruptive Factors: Impact on Students** (made by the author)

#	Statement	Value (Frequency / Percent)		
		Does not concern	Concerns very little	Concerns somewhat + very much
27	Teachers disregard students' individual needs	86 / 48.3	74 / 41.6	18 / 10.1
28	Students are not encouraged to develop their maximum abilities	97 / 54.5	62 / 34.8	19 / 10.7
29	Teachers expect little from students	87 / 48.9	71 / 39.9	20 / 11.2

It can be summarised that despite indications of teachers fatigue and bureaucratic hurdles, there's a notable inclination among teachers to embrace novelty in teaching methodologies, albeit with varying degrees of enthusiasm. This suggests a potential for innovative teaching approaches within interest-related education. However, the research also highlights challenges such as limited participation in the European Union teachers mobility programs, indicating a need for greater support and incentives to encourage broader professional engagement among teachers. Furthermore, the study underscores the importance of teachers' personal qualities, such as moral principles and sociability, in shaping class dynamics and student-teacher relationships within interest-related education settings.

### **Conclusions**

The image of a teacher in Latvia is traditional and conservative, where there is an idea of the teacher as the embodiment of morality and a model for students. The majority of teachers are female, and the ideal age from the perspective of the students is between 30 and 50 years. The teacher's appearance and behaviour are important criteria for assessing the teacher's image. Classical clothing, calm and definite voice, and non-verbal communication, such as gestures and mimics, impact students' perception of the teacher and their authority and competence.

The professional qualities of the teacher are essential for an effective learning process. Good teachers are those who can adapt to the learning styles of different students, are competent in their teaching skills and have a positive attitude. Teacher's personal qualities, such as care and trust, creativity, and humour, can have a positive impact on students' attitudes and successful learning outcomes. The teacher's eccentricity can be seen as both attractive and uncomfortable, depending on how these qualities are commensurate with the learning process and students' willingness to learn. The relationship between teacher and student is important both for the effectiveness of the learning process and for students' emotional well-being. Good teachers are those who care about their relationships with students, offer support, and use extra effort to create a supportive and open

environment. The impact of the teacher on students can be significant, especially in terms of how they develop and learn to understand and solve problems. Good teachers who promote understanding and wisdom in life can provide a lasting positive impact, while worse teachers can create negative associations with the school and learning process.

The institution heads generally agree that interest-related education teachers regularly improve their professional competence. However, a third of them only partially agree with this statement. This indicates that there may be inconsistencies or dissatisfaction with existing courses or their results in interest-related education. The heads show an average level of approval for various statements about the professional qualities of interest-related education teachers, which may indicate that they may be concerned about certain elements of teachers' work. Although some of the responses from the heads of institutions show the willingness and opportunities of teachers to share their experiences and try new methods in the learning process, it is evident that the majority of the heads point to the weak involvement of teachers in the European Union's teacher mobility programs and methodological commissions. This points to a potential problem with the professionalism and improvement of teacher work.

The heads' responses about the personal qualities of interest-related education teachers, such as high moral principles and sociability, suggest that some institution heads realistically see their teachers. This may also indicate that there may be various problems in the real context of the school environment. Heads' responses about teachers' participation in institutional events and their pride in their institution, city, county, or country suggest that this may affect their motivation and their relationships with students.

The responses of the heads of institutions about the goals of teachers in interest-related education show that some teachers strive for maximum learning achievements and the development of students' skills, while others also emphasize the importance of social and emotional skills. This indicates different priorities and approaches in the work of teachers, which could depend on the philosophy and needs of the particular teachers. Heads' support for the statement that the development of students' virtues is as important to teachers as the acquisition of their skills and knowledge in classes suggests a possible tendency to pay more attention to the comprehensive development and well-being of students than to academic achievement alone.

The heads' responses to disruptive factors, such as teaching diversity and resistance to change, suggest the need to improve the teaching process to support interest-related education teachers and ensure successful learning outcomes for all learners. Although most heads of institutions believe that teachers are prepared for their classes and have no difficulty in teaching students of different ethnic backgrounds, there is still a small percentage who find this situation disruptive. This could indicate the need for further measures to promote intercultural



understanding and adapt the learning process to different groups of students. Most heads do not indicate the absenteeism of interest-related teachers or the delay of the start of classes as a disruptive factor that would affect the course of classes. Teachers are usually accurate and timely in their actions, which facilitates the flow of the learning process. Institution heads generally believe that interest-related education teachers have a good relationship with students, and most believe that teachers are not too harsh with students. Teachers usually build good relationships with their group of students and try to be open and understanding.

Disturbing factors that can impact students are considered rare, but still disruptive. Institution heads are aware of the potential problems that may arise in the learning process and are prepared to address them in order to provide an effective learning environment.

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## EDUCATIONAL NEEDS OF OLDER ADULTS

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**Abstract.** *The aim of the article is to find out educational needs of older adults and to discuss the process of the training course development and its implementation jointly with older learners in Lithuania. Mixed methods research was applied incorporating survey and participatory research. The training course was developed based on international survey data aiming to reach older learners who had less possibilities to engage in a lifelong learning process. Data analysis revealed similarities across countries, based on which the general template of the course was developed. It included topics in biological, psychological and sociological aspects of ageing, networking and joint research possibilities. However, data showed that there were variations in needs not only between countries but inside countries as well. Participatory research approach allowed older learners to follow the needs and to make necessary changes. Such changes were made in content (for ex., some sociological topics substituted by culture) and in organization (less intensity and shorter sessions) of the course. Even if the learners agreed to involve in participatory research, at the end they were told that it was too many interviews and discussions. On the other hand, they were proud that other learners will take their designed course.*

**Keywords:** *biological, co-designing training courses, educational needs, older learners, psychological and sociological approaches in ageing.*

### Introduction

Various documents underline the importance of lifelong learning generally (European Commission..., 2019; 2021; 2022; Programme of Non-formal Adult Education and Continuous Training for 2016–2023, 2016) and for older adults specifically (AGE, 2022). National policy documents (LR Neformaliojo..., 1998; LR Neformaliojo suaugusiųjų ..., 2014; Valstybės švietimo 2013–2022 m. strategija, 2013; LR Seimas, 2023, etc.) also stress and regulate older adults' lifelong learning in Lithuania.

However, the data of various reports shows that the reality of older learners' situation is challenging worldwide and locally. UNESCO 5th global report on adult learning and education: citizenship education: empowering adults for change (2022) states that participation of older adults in lifelong learning activities decreased 24% of the 159 surveyed countries. The situation at national level also is worsening. Already in 2020 OECD (2020) has identified educational inequalities among older workers in Lithuania as a major problem. This also caused a growing inequality in the country's labour market. For example, the employment rate of older workers without education was 40%, compared to 80% for skilled workers what was above EU average. The newest report says that "Access to training is highly unequal and few older people participate in learning activities in Lithuania. The overall participation rate in training is considerably lower than the OECD average (27% vs 39%). The gap in training participation between younger and older people is one of the largest in the EU, as less than 18% of older adults participate in training (whether formal or non-formal job-related training). Training is unequally used. It is more frequent for the highly educated, younger, high income, and those working in large firms There are significant barriers to training older people and to engage them in learning. The motivation for training is lower among older persons, who report more difficulties identifying their skills needs and perceive training to be less useful" (OECD (2023, p. 22-23).

Upskilling older workers is seen as one of the possibilities to keep people in labour market and to ensure their successful aging during retirement, but research data shows (Moskvina & Žalimienė, 2019) that readiness of older people to participate in lifelong learning activities aimed at personal development are higher than for training aimed at improving professional competence.

At national level lifelong learning of older adults is analysed from various perspectives. Authors mention it as important prerequisite or factor for active ageing (Bagdonas, Kairys & Zamalijeva, 2017; Gustainienė & Burauskaitė, 2018; Moskvina & Žalimienė, 2019; Moskvina, J., 2020), it is presented in the context of labour market for extending working life (Lengvinienė & Rutkienė, 2016; Moskvina & Žalimienė, 2019). Also, a big attention in research is paid to the Third Age Universities (Kalvaitis, Baranauskienė & Mačėnaitė, 2014; Kalvaitis, 2018; Sėlenienė, 2021). Learners of Third Age Universities usually are described as high-educated, living in urban or suburban areas and active in social and cultural life people.

However, there is very little research about the learning of other older adults. There are various initiatives in the country, but they are not systemized in a scientific way. There are very few researches which analysis lifelong learners needs generally (Kvalifikacijų ir profesinio mokymo plėtros centras, 2021) and old learners' specifically (Moskvina & Žalimienė, 2019). This only study about older learners' needs was published before pandemic, and as the situation during

and after pandemic has changed, there is no any evidence about after-pandemic situation in the country.

Discrepancy between legal regulation and reality, declining numbers of older learners in lifelong learning activities, knowledge gap about older learners (not at the Third Age Universities) highlights the relevance of the article and forces to search for the new ways of older learners' motivation and empowerment. The participatory research approach (Urbaniak & Wanka, 2023) was taken as one of such possibilities.

The aim of the article is to find out educational needs of older adults and to discuss the process of the training course development and its implementation jointly with older learners.

## **Methodology**

Mixed methods research (Creswell & Creswell, 2021) was applied.

Firstly, international survey by four partner universities: University of Lille (France, initiator), University of Minho (Portugal, methodology development), Mykolas Romeris university (Lithuania) and University of Wroclaw (Poland) was implemented with participation of 590 respondents 55+. It aimed to find out older learners needs for the development of training course. Nonprobability purposive sampling applying heterogeneity principle was used. The aim was to reach older adults from various regions, various socioeconomic status, in various health conditions and having various digital competences avoiding easily reached, well-educated and/or trained people with a good access to lifelong training possibilities (for ex. Third age university participants). The article presents quantitative data only of one national sample, which consisted of 110 respondents. Data analysis was done by descriptive statistics.

In the second step participatory research strategy was applied. 14 older learners discussed survey results, adjusted training template to their needs, gave feedback during course implementation. Interviews and discussions with older learners allowed to react and make necessary changes during course implementation.

Main social research ethic's principles were followed, ensuring anonymity in quantitative and confidentiality in qualitative research.

### **Co-designing training course with older learners**

#### *Description of samples.*

110 older people have participated in the survey, 95 women and 15 men. The range of the age was 52-90, mean age was 67 (SD 0.78). Data analysis showed that subjective age was significantly younger that the chronological age. Subjective age range was 18-90 years old with the mean age 56 (SD1.11).

Educational level varied from ISCED 4 to ISCED 8, dominating by ISCED 6-7 (ISCED 4- 4, ISCED 5- 22, ISCED 6- 43, ISCED 7- 44, ISCED 8- 6), meaning that most of the respondents were bachelor or master diploma holders what partly reflects the general population in the country.

14 older learners involved in the participatory research. All participants were women. The average age of participants was 76,5 years. Two women had a secondary education, two had a professional education, five women had a non-university higher education, two had a higher university education and one had an incomplete higher education. Learners had very different professions: 3 teachers, pedagogues, 2 nurses, 2 accountants, a typist, a financier, a laboratory assistant controller, a waitress, a food preparation technologist, a construction worker and an operator.

#### *Organization of the training.*

Aggregated data of the research allows to describe the “ideal” course in terms of its organization. According to the participants the optimal group size is 20 learners, duration – 20 hours. It should be free of charge and to end with the certificate of attendance, there is no need for academic or any other recognition. They also deny the self-check test at the end of the course.

All learners answered positively to the questions: do you find it interesting that a research project, carried out in groups, is included in the training; and could the training include participatory research? At the beginning researchers were not sure if the learners understood the last two questions even after the explanations what does it mean participatory research. The first feeling was that learners accepted it as one more interesting free time activity but not real involvement in the research. But the later process showed learners full involvement in providing feedback and giving suggestions during course’s implementation.

#### *Content of the training.*

The research participants (N-110) were asked about willingness to enrol in training course about age-related challenges: 27.7% responded positively, 54,5 maybe and 17,9 negatively. Data analysis showed that older adults educational needs very depending on demographic data. The respondents clearly declared that they see the value of various training courses, actively described what kind of courses they would like, but at the same time said that they would put little efforts in searching or involving in such courses.

Respondents assessed the need of specific topics in biological, psychological and sociological approaches.

The biological approach included such suggestions as: the novelties on the five senses: hearing, vision, taste, touch and smell; balancing dietary and nutritional needs and the changes in the digestive system, physical activity and motor skills/motricity; sleep and biological rhythms; health literacy. From biological approach the least desirable topic was about five senses (3.0), all the rest were favoured almost equally (3.4-3.5) in Likert scale.

The psychological approach included topics of cognitive and brain reserve; mood and cognition; learning from experience and fostering resilience in ageing; cognitive frailty and preventive interventions; stress, mental health and ageing. From psychological approach the most popular topic was stress, mental health and ageing (3.7), all the rest almost equally less popular (3.1-3.2).

The sociological approach suggested these topics: demographic challenge and public policy; social representations, attitudes, and behaviours; social inclusion; social participation, quality of life and well-being, the later one was assessed the highest (3.6), all the rest much less favourable (3.0-2.7).

At the end of every block of questions an open possibility to write own topic was added. Respondents suggested to include such topics as health literacy, unbalancing of the body (vertigo), e-banking, learning new languages.

In sum, older adults clearly defined their educational needs in suggested topics as well as they defined their own, not mentioned in the questionnaire. Their educational needs for biological and psychological fields were rated higher than sociological one. Looking more precisely to specific topics, respondents expressed the highest need for the topic of mental health and ageing (3.7) in psychology field and social participation, quality of life and well-being (3.6) in sociology. These expressed needs in one or another sense related to well-being thus showing this gap in older learners' knowledge. Older adults tended to rate higher in their interest topics regarding individual health and well-being in a broad sense rather than those related to age-related declines or society.

#### *Implementation of the training.*

After adjusting the organization process and content, the course was implemented in five sessions each lasting four hours. Every session was taught by different lecturer, some sessions were at the university, some in other settings, including one session in the museum.

The training course started with the general introduction and discussion about the expectations of the learners. Each session began with a short introduction and reminder about the general idea of co-designing the course. At the end of each session learners reflected on it and filled in semi-structured questionnaire. Soon it became clear that the questionnaires were useless as all the learners for all questions choose only positive answers. Trainers/researches had to make changes and to put bigger emphasis on reflections and discussions.

The course was wrapped up by group discussion about the training process and product – training course curriculum. Group discussion was substantiated with learners designed poster (Fig. 1) and words' cloud.

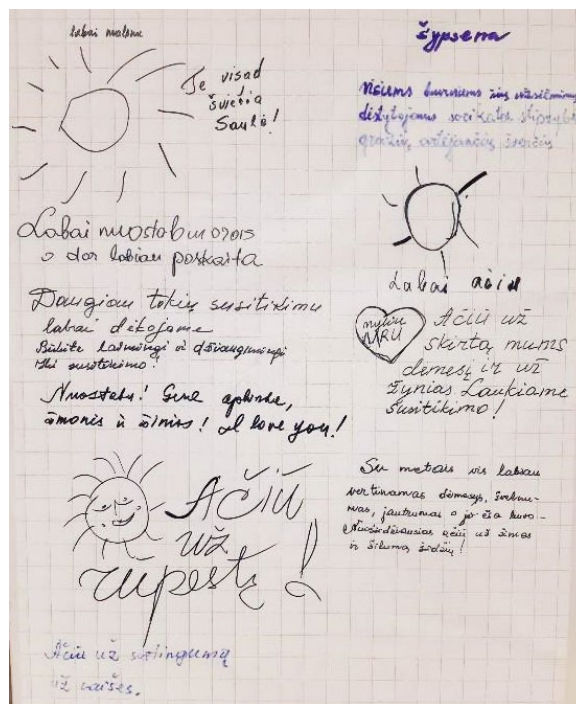


Figure 1. Learners’ poster about the feedback of training (group discussion outcome)

The words’ cloud included these most common words: being together, knowledge, smile, attentiveness, cosiness, comfort, ageing.

During the reflections after the sessions, while making the poster and naming the words for words’ cloud, the learners concentrated more on relations and atmosphere of the training rather than on the content and what they have learned. The question, how much these choices have been influenced by participatory research, stays unanswered.

*The future of the course.*

The co-designed training course was piloted with the group of older learners and is ready for replication. Now it is open for any older learner. However, as survey data showed, older learners are reluctant for searching and inscribing to any courses, therefore more targeted dissemination and promotion is needed for less active older adults. Complementary idea is to suggest this course to the Third Age University learners who are more advanced in lifelong learning activities and to get their reflections and feedback.

*Reflection of the trainers/researchers.*

All trainers/researchers were experienced in working with older adults, however, this training course brought new challenges. First of all, the content of the course and sessions were changed according to learners’ needs and trainers’ possibilities. Thus, the general concept and comprehensiveness of the course had to be monitored very carefully as the initial idea was to have integral course but not five loolsy interconnected sessions.



Secondly, the participatory research put additional requirements for the trainers. They needed to find balance between knowledge they want to share and participatory research activities. It brought bigger workload than just giving the lectures and also called for more energy in working with learners. Some trainers had done participatory research previously, but co-designing the training course with older learners brought new experience.

### Conclusions

The training course was developed based on survey data aiming to reach older learners who had less possibilities to engage in lifelong learning process. Data analysis revealed similarities across countries, based on which the general template of the training course was developed. It included topics of biological, psychological and sociological aspects of ageing, and participatory research possibilities. However, data showed that there were variations in learning needs not only between countries but inside countries as well. Participatory research approach allowed to follow older learners needs and to make necessary changes during course implementation. Such changes were made in content (for ex., some sociological topics substituted by cultural) and in organization (less intensity and shorter sessions) of the course. Even if the learners agreed to involve in participatory research, at the end they told that it was too many interviews and discussions. On the other hand, they were proud that other learners will take their designed course. Co-designing training courses via participatory research was beneficial for all participants: older learners and trainers/researchers. It also could have a wider impact on older learners' population and professionalization of the researchers in participatory research.

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# THE IMPERATIVE OF REFORMS IN TEACHING FOREIGN LANGUAGES TO ADULTS: A METHODOLOGICAL NECESSITY AND SOCIAL TREND

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**Abstract:** *This article studies the imperative of reforms in teaching foreign languages to adults both from the social point of view and methodological needs of the particular process of foreign language teaching for representatives of a special age group. The starting point of the article is the authors' own experimental research in the form of a questionnaire, which, as the target audience, conducted a survey of people aged 45+ studying at or graduated from foreign language courses as a part of integration programs (the survey was conducted among relocants from Ukraine after February 24, 2022) finding out what factors contributed / did not contribute to their success and psychological comfort in language learning. The second part of the study presents the results of a survey of teachers who work in foreign language courses attached to higher educational institutions of Ukraine and presents their point of view on the difficulties of teaching in mixed age groups and in groups dominated by people over 40 years. The purpose of the article is to show that in order to fulfill the social tasks that modern society places on the study of foreign languages by older people, changes in methodological approaches to the stated process are necessary.*

**Keywords:** *adult students, anti-agism, methodological need, social trend, teaching of foreign languages.*

## Introduction

In an increasingly interconnected world, proficiency in foreign languages has become not only a valuable skill but also a necessity for personal, professional, and social advancement. While language learning has traditionally been associated with formal education during childhood and adolescence, there is a growing recognition of the importance of teaching languages to adults. This essay explores the imperative of reforms in teaching foreign languages to adults,

highlighting the methodological necessity and societal trend driving this imperative. In an increasingly interconnected world, proficiency in foreign languages has become not only a valuable skill but also a necessity for personal, professional, and social advancement. While language learning has traditionally been associated with formal education during childhood and adolescence, there is a growing recognition of the importance of teaching languages to adults (Steber, Rossi, 2021). This article explores the imperative of reforms in teaching foreign languages to adults, highlighting the methodological necessity and societal trend driving this imperative. Teaching foreign languages to adults requires a tailored approach that acknowledges the unique characteristics, needs, and motivations of adult learners. Unlike children, adults bring prior knowledge, life experiences, and cognitive abilities that influence their language learning process (Zilberman, 2019). Therefore, traditional pedagogical methods designed for younger learners may not be effective for adults. Beyond the methodological necessity, there is a broader societal trend driving the imperative of reforms in teaching foreign languages to adults. This trend is shaped by various social, economic, and demographic factors. The outbreak of full-scale war in Ukraine, initiated by the Russian Federation's invasion on February 24, 2022, has triggered a humanitarian crisis of unprecedented proportions. As a result, millions of Ukrainians, predominantly women with children and the elderly, have been forcibly displaced, seeking refuge in other countries and embarking on the arduous journey of integration into unfamiliar societies. In light of this crisis, the issue of effectively teaching foreign languages to adults, particularly those over 40 years old, has gained immense relevance. The article aims to present the idea of the need for new methodical approaches to make the process of teaching foreign languages to older students (people over 45) more effective. It highlights evolving social trends and the inherent challenges encountered by both learners in this age group and the educators who instruct them. The primary research methodology employed for this article involved administering a questionnaire and utilising statistical analysis to interpret the gathered data. The findings derived from this approach are detailed within the article.

### **Literature review**

As individuals age, the importance of learning a foreign language grows significantly, contributing to personal, professional, and cognitive enrichment. This literature review delves into works utilised by the authors to frame and characterise the challenges of foreign language acquisition among older individuals, typically aged 40-45 and above. Specifically, publications by J. Agor (2019) and R. Van Sickle with J. Rosa (2022) provide insights over the problem from a social perspective, emphasizing the undeniable benefits of language learning within this age group. Meanwhile, J. Nilsson, R. Berggren, B. Garzon,

and M. Lovden (2021) and R. Schmidt (2010) offer medical viewpoints, discussing the implications and considerations regarding language learning in older age. Additionally, K. Rege (2016) and S. Steber with S. Rossi (2021) highlight career opportunities stemming from foreign language proficiency for individuals over 40. V. Murphy, H. Arndt, J. Baffoe-Djan, H. Chalmers, E. Macaro, H. Rose, R. Vanderplank, and R. Woore (2020) contribute a comprehensive examination of adult learners' psychological profiles, while B. Mei's (2022) scientific article delves into their educational needs. Furthermore, insights on motivation are provided by A. Zilberman's (2019) online post. Collectively, these works enable the authors to construct a nuanced understanding of the educational landscape for adult language learners, encompassing a diverse array of perspectives and considerations.

### **Methodology**

Given that this article encompasses both a theoretical examination of foreign language acquisition among individuals aged 45 and above, alongside the presentation of survey findings conducted by the authors, its methodology represents a fusion of approaches aimed at guaranteeing the credibility and substantiation of the content presented within the article. In particular, the following scientific methods and approaches were used:

1. Survey was a primary method for gathering data on the difficulties and psychological discomforts experienced by older learners and the methodological challenges faced by teachers;
2. Interviews with teachers who work with multi-aged language-learning groups provided rich qualitative data on their experiences, challenges, strategies and methods that are typically used for teaching this particular group of students;
3. Observing language classes with older learners provided first hand insights into teaching methods, learner interactions, and challenges faced in the classroom.
4. Analysing existing materials over the general issues of the problem under consideration frameworked the first part of the article that presents the main ideas as to teaching foreign languages to the people over 45 as a modern social and pedagogical trend.

Though Literature Review was not a primary research method, it together with Mixed Methods Approach allowed for a comprehensive understanding of the issues at hand. Triangulating data from multiple sources enhanced the validity and reliability of findings

## **Research results**

The issue of learning a foreign language in adulthood (at least after 40 years) is not something new for modern sociology and it correlates with many social movements, in particular "Long-life education", "Anti-ageism programs", "Possibilities of labor mobility of highly qualified workers", "Accelerating the integration of migrants and relocants" etc. Numerous publications emphasise the multifaceted aspects of foreign language learning for people after 40-45, covering personal, cognitive, and interpersonal aspects of well-being, and in particular, reinforcing such benefits as:

- Language learning often involves engaging with local or online communities of learners: for individuals over 45, this can provide opportunities for social interaction with people who share similar interests and goals, fostering new friendships and support networks (Rosa, 2022);
- Learning a foreign language opens doors to understanding and appreciating different cultures: older learners may have a deeper appreciation for cultural nuances and traditions, enriching their social interactions as they engage with native speakers and immerse themselves in cultural activities;
- Many adults pursue language learning as a means to enhance their travel experiences: knowing the local language can facilitate meaningful interactions with locals, leading to deeper cultural insights and connections while exploring new destinations (Van Sickle, 2017);
- Learning a new language can have cognitive benefits, such as improving memory and problem-solving skills, which are particularly relevant for older adults. Additionally, attending language classes or joining language exchange groups provides opportunities for mental stimulation and socialisation, which are important for overall well-being;
- Language proficiency can open up new professional opportunities for older adults, whether through international business ventures, volunteer work, or teaching opportunities, provide avenues for social interaction and personal growth beyond traditional retirement activities (Rege, 2016);
- Learning a foreign language may also strengthen familial bonds, especially in multicultural families or when grandchildren are learning a heritage language. Older adults may find joy in sharing language-learning experiences with younger generations, fostering closer relationships and cultural connections within the family;
- Language learning for individuals over 45 is often driven by personal fulfillment and a desire for continued growth and development:

engaging in language learning activities provides a sense of achievement and purpose, while also offering opportunities for social connection and cultural enrichment (Nilsson et al., 2021).

Teaching foreign languages to adults necessitates a customised approach that recognises their distinct characteristics, requirements, and incentives. Unlike children, adults come with pre-existing knowledge, life experiences, and cognitive capabilities (Murphy et al., 2020) that shape their language acquisition journey. Consequently, conventional teaching methods geared towards younger learners may not yield the same effectiveness when applied to adults (Schmidt, 2010). In addition to the methodological imperative, a larger societal trend underscores the necessity for reforms in teaching foreign languages to adults. This trend is influenced by a multitude of social, economic, and demographic factors.

The displacement of over 6 million Ukrainians (About the Crisis in Ukraine, 2024), many of whom are women, children, and elderly individuals, has created an urgent humanitarian imperative to facilitate their integration into host communities. Language proficiency stands as a foundational element in this process, enabling refugees to navigate essential services, secure employment opportunities, access education, and engage meaningfully in social interactions. Effective foreign language teaching for adults assumes a paramount significance in empowering displaced individuals to rebuild their lives and contribute positively to their new environments. Forced migration engenders a myriad of challenges for displaced individuals, particularly in the realm of language acquisition (Agor, 2019). Adults, especially those over 40 years old, may encounter unique obstacles in learning a new language amidst the upheaval of displacement. Factors such as trauma, cultural adjustment, and limited access to educational resources can impede the language learning process, exacerbating feelings of isolation and marginalisation. Moreover, older adults may face cognitive barriers and entrenched language habits that necessitate specialised pedagogical approaches tailored to their needs.

The authors of the article conducted a survey of people over 40 years old (the oldest recipient is 83 years old), who are studying or have completed mandatory language courses that are part of the program for the integration of Ukrainian refugees in countries such as Portugal, Germany, Poland and Spain. The purpose of this survey (300 people from different cities of the above-mentioned countries took part) was to find out whether the process of learning the language at language courses, arranged by the government, was psychologically and emotionally comfortable for them, as well as what exactly contributed / hindered their progress. The survey was conducted in March 2023, June 2023 and December 2023 with graduates and students of courses to gain a deeper understanding of the problems. With the axiomatic starting point, that state language courses are staffed by highly qualified teachers who have modern methods of teaching a specific language as a foreign language and use a wide

range of tools (modern textbooks (no older than 2018 edition), online platforms that contain additional tasks and educational materials, educational applications, etc.), students who studied with the same teacher, but in different groups and achieved the goal of mastering the language, gave quite different answers to questions related to the emotional comfort of learning. The results of the survey on the emotional comfort of learning a foreign language on courses among recipients are as follows:

1. Question 1: Were you emotionally comfortable studying at the courses?

Variants of answers: yes, completely - 9 %

quite comfortable - 25%

normally - 31%

quite uncomfortable - 16 %

not comfortable at all - 19%

In the course of further research, it was found that the emotional satisfaction of students was influenced by only 2 factors: the age of fellow students and the age of the teacher: the older the teacher was, the more comfortable students aged 40+ felt in the classroom. And the more homogeneous the groups were in terms of age, the higher was the percentage of emotional satisfaction with learning among students of a certain age. The most comfortable were the students who, for learning a foreign language, found themselves in groups where the age of the students varied within 10 years (40-50 years). The more diverse the age of the students who were grouped together, the less comfortable the recipients found the learning process in the classroom. Note that during the research, the authors of the article did not happen to see state language courses for Ukrainian refugees, which used the principle of dividing students by age. Usually, this process takes into account only the level of language proficiency. Therefore, 20-year-old, 45-year-old and 60-year-old people could be in the same group for learning a foreign language on courses.

As for the reasons that led to emotional dissatisfaction with learning a foreign language in multi-age groups among students aged 40+ (note that all students in such groups were Ukrainians with almost the same level of foreign language proficiency), they can be divided into several groups:

765436064. *Diverse learning styles and preferences*: Recipients identified that younger students in their groups gravitated toward interactive, technology-oriented learning. They felt comfortable with fast-paced actions, multitasking, and homework with using educational apps and platforms. In groups dominated by young people, students over 40 lacked more traditional approaches (with textbooks, traditional forms of listening, writing words, composing dialogues, etc.). Because of this, there was no full-fledged communication and cooperation between students of different ages, tasks were performed only in established pairs within the group. Older students took a more passive position in learning;



765436065. *Generational and cultural differences*: The difference in likes, interests, famous people, etc. between the younger students and the 40+ students also meant that the older people either didn't understand what was being talked about or the teacher had to spend time at the lesson and to explain to a certain part of the students who or what this text is about. (We note once again that the textbooks used in the courses were published after 2018). Older recipients found it difficult to relate to the experiences, interests, and cultural identities of their younger classmates, leading to feelings of alienation and disconnection. In addition, as cultural norms and communication styles differ between people of different ages, it further complicated the interaction between students (and sometimes, between students and the teacher if the teacher was much younger) and hindered effective language learning;
765436066. *Pace of learning and academic expectations*: Recipients noted that it was quite difficult for them not only to keep up with the pace of the lessons (younger students are used to rapid information processing and multitasking and can grasp language concepts more quickly and demonstrate a higher level of language proficiency in a shorter period of time), but also assimilate the amount of new information offered to them. They needed additional time and support to learn new information and master complex linguistic structures, constant repetition of the material passed (younger students did not need such repetitions and perceived this type of activity negatively). This discrepancy in the pace of learning also caused frustration and demotivation among older students, a certain withdrawal from the learning process. ;
765436067. *Socio-economic and professional background*: Different goals and aspirations for language learning between older and younger students within the same group led to misunderstandings in the choice of content to study, as younger students had a wider range of interests, while students after the age of 40 would like to study “promising” for themselves material. For example, if a student has a professional education and apprentices in a certain profession, then he/she would like to learn vocabulary from this direction in order to find a job in the specialty as soon as possible. According to the recipients, young students (especially those who did not finish their education, did not gain professional skills in Ukraine, etc.) “were happy to learn almost everything”. In addition, differences in educational attainment and life experience had some effect on the level of prior knowledge and language skills among students, further complicating the learning process and potentially exacerbating feelings of inadequacy among older students;
765436068. *The level of a student technical training*: difficulties also arose with exercises needed to use online platforms, since the level of general computer education and training did not allow older students to join tasks in time, they did not always have enough time to complete tests online (due to the fact that

a lot of time was spent on understanding of "how it works") . The use of mobile applications was also quite difficult for older students (after 45 years) due to low computer literacy and a certain technological bias. This aspect became an increasingly negative factor with the age level of the recipient.

Teaching a foreign language to a diverse group of learners, spanning a wide age range, presents unique challenges for educators. As classrooms become increasingly heterogeneous, teachers encounter a variety of obstacles that stem from differences in learning styles, life experiences, and expectations among students. The second half of the survey the authors explored the difficulties that teachers may encounter while instructing multigenerational foreign language classes (Mei, B. (2022)). The data for this part of the study was the results of a questionnaire which was offered to 150 teachers from different countries (Ukraine, Spain, Portugal, Kazakhstan, the People's Republic of China, France). All the recipients are university teachers of English, French or Portuguese and have experience teaching a foreign language at language courses attached to the educational institutions there they work. The choice of countries to participate in the survey was determined by one of the authors' participation in the international university teachers training program at the University of Cadiz (Spain) in March 2023, where, with the consent of the program organisers, the questionnaire was offered for the participants.

Among the questions that were asked to practicing teachers in view of the subject of the survey and research, in particular, there were the following:

1. *Have you ever worked with multi-age groups?*

Yes (age of students 20-45 years old) - 83%;

Yes (age of students 20-63) - 15%;

No (only youth groups aged 20-35) - 17%

2. *Did you have previous appropriate training for working with multi-age groups (took advanced training courses, had relevant courses while studying at the university, attended courses in non-formal education programs, self-education, etc.)?*

No - 91%

Yes - 9% (all 100% of the recipients noted that they became interested in the issues of teaching a foreign language to older people only after they saw that these students reacted badly to the standard methods used in modern foreign language courses; only in the form of self-education )

3. *In your opinion, do methodological approaches to teaching a foreign language differ for people of different ages?*

Yes - 79%

Yes, but only for short-term courses with limited learning goals (courses for seasonal workers; business foreign language courses, etc.) - 32%

No - 19%

It's hard to say / I haven't thought about this question - 2%

4. *Do you feel the difference when working with multi-age groups dominated by young people (under 35) and older students?*

Yes - 78%;

Yes, but I don't care (the students are to follow the teacher and the rules) - 34%

No - 22

No (only worked with youth groups aged 20-35) - 17%

The authors of the article were also somewhat surprised by the difficulties and difficulties identified by teachers who have experience working with older students. Among such typical ones as diverse learning settings, variability of previous knowledge and experience, pace of learning and adaptation (they are quite typical and students paid attention to them as well during the survey in the first part of the study), the most big challenge for the teachers from Khasakhstan and Portugal was a gap between generations and communication barriers, which was noted by the teachers, who worked with adult students and were younger by age, than then (about 14%). The teachers noted that it was psychologically difficult for them to establish an emotional contact with older students and to choose the appropriate manner of communication due to the peculiarities of language etiquette between older and younger people in these countries, and it was also very difficult to position themselves as a teacher with such an audience (since older people in these cultures are socially dominant in a certain way). Therefore, as these teachers noted, it is rather difficult to work with older students with no additional knowledge, skills and psychological training, and the students themselves are more comfortable learning from teachers who are closer to them in age.

The response of teachers and older students to the question about *how they would like to learn a new foreign language if they had to learn it* was also quite revealing:

I am completely satisfied with the format of the courses where I am currently studying / working - 20%

I would like to learn a language in the circle of people who are close to me not only in terms of education, but also in age - 57%

I would like to study the language with a tutor - 23%

It should be noted that among the people who have chosen the last option, 75% are teachers. The main reason for their choice is the lack of targeted professional training for modern specialists to work with such a unique category of students as people after 45 years.

In response to the Ukrainian crisis (in which, as in a mirror, can be seen typical problems that inevitably arise during migration processes, total globalisation, humanitarian, military and social conflicts that have intensified in different parts of the world), effective language teaching assumes a pivotal role in facilitating the integration and empowerment of displaced individuals. Language programs designed specifically for adult learners must adopt innovative methodologies that prioritise communicative competence, cultural sensitivity, and practical language skills. Tailored curricula, flexible learning modalities, and targeted support services are essential components of language education initiatives aimed at addressing the diverse needs of displaced populations. Furthermore, fostering a supportive and inclusive learning environment is crucial in fostering resilience and fostering a sense of belonging among adult language learners (Mei, 2022). By equipping displaced individuals with the linguistic tools to communicate and collaborate with local residents, language education initiatives facilitate intercultural understanding, social cohesion, and mutual support networks. Moreover, language learning serves as a bridge between diverse communities, fostering empathy, compassion, and solidarity in the shared pursuit of rebuilding lives shattered by conflict.

## **Conclusions**

The imperative of reforms in teaching foreign languages to adults is driven by both methodological necessity and societal trends. Adopting learner-centred approaches, offering flexible learning pathways, and emphasising practical language skills are essential for effectively meeting the needs of adult language learners. Moreover, recognising the social trends of globalisation, lifelong learning, and demographic shifts underscores the importance of prioritising language education for adults as a means of fostering intercultural understanding, promoting personal and professional development, and addressing the linguistic needs of diverse communities. Embracing these reforms not only enhances individual opportunities but also contributes to building more inclusive, interconnected, and multilingual societies in the 21st century. The Ukrainian crisis underscores the imperative of effective foreign language teaching for adults as a cornerstone of humanitarian response and community resilience. By empowering displaced individuals with the linguistic skills and cultural competence necessary for integration, language education initiatives offer a pathway towards rebuilding lives, fostering solidarity, and nurturing hope amidst adversity. As the global community rallies to support those affected by the Ukrainian conflict, prioritising effective language teaching stands as a tangible expression of solidarity and a beacon of hope for a brighter future.

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# IZGLĪTOJOŠĀ TŪRISMA TEORĒTISKIE ASPEKTI

## *Theoretical aspects of educational tourism*

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**Abstract.** *In today's technological era, rural tourism with its unique and unusual offer, which carries the traditions, culture and culinary heritage of ancestors, becomes a proper and unique cultural capital, and it has opportunities to hybridize with other types of tourism, for example, with educational tourism.*

*As a separate type of tourism - educational tourism, becomes an innovative opportunity to revive the usual rural tourism offer. In order to retain the interest of tourists, the tourism experience must have transformative potential. Consumer experiences can contribute to tourists' cognitions and emotions, resulting in psychological, physical, social, or knowledge changes. Educational tourism combines the features of two fields: education and tourism, which at the intersection gives the actual educational tourism. In Latvia, educational tourism is not defined as a separate economic category. This type of tourism can become a successful platform for travelers' self-growth, creating opportunities for them to learn, relax and improve spiritually. The aim of the study is to analyze the interpretations of the definition. The research uses the scientific literature research method. The research questions are (1) What research has been done on aspects of educational tourism? (2) Which scientists have focused on the study of this concept? (3) What are the prerequisites for the introduction of educational tourism in Latgale/regions? An exploratory study was implemented and described in this paper.*

**Keywords:** *educational tourism, educational tourism definition, tourism, tourism development.*

## **Ievads**

### ***Introduction***

Tūrisms ir kļuvis par raksturīgu mūsdienu cilvēka dzīvesveida iezīmi, tiecoties pēc jauniem piedāvājumiem, iespaidiem un zināšanām, izzinot daudzveidīgu pasauli.

Tēmas aktualitātes pamatu veido tas fakts, ka izglītojošais tūrisms ir specifisks tūrisma veids, tas nav plaši izplatīts un populārs tūrisma tirgū Latvijā. Rakstā tiek atspoguļotas izglītojošā tūrisma un tā produktu definīcijas. Izglītojošā tūrisma tirgus segments ir ievērojami mazāks salīdzinot ar masu tūrisma segmentiem. Raksts ir veltīts teorētiskiem jautājumiem izglītības tūrisma jomā. Tajā aplūkota jēdziena “izglītojošais tūrisms” izcelsme un sniegtas dažas iespējas galveno komponentu definēšanai – “izglītība”, “tūrisms”.

Latvijas likumdošanā atšķirībā no terminiem “tūrisms” un “izglītība”, trūkst jēdziena “izglītojošais tūrisms”. “Latvijas tūrisma attīstības pamatnostādņēs (MK, 2014) tika definēti četri prioritārie tūrisma veidi un attīstības virzieni – kultūras tūrisms, dabas tūrisms, veselības tūrisms un darījumu tūrisms” (LR Ekonomikas ministrija, Latvijas nozares tūrisma analīze, 2019).

Jēdziens “izglītojošais tūrisms” ir atvasināts no tādiem tūrisma veidiem kā “kultūras tūrisms”, kura mērķis saskaņā ar LR tūrisma likumu ir “iepazīšanās ar kultūras vidi: kultūras mantojumu, tradīcijām un dzīvesveidu, kā arī aktuālām kultūras un mākslas norisēm,” “dabas tūrisms”, kura mērķis saskaņā ar LR tūrisma likumu ir “izzināt dabu, apskatīt raksturīgas ainavas, biotopus, novērot augus un dzīvniekus dabiskajos apstākļos, kā arī izglītoties dabas izziņas jomā, tūrisma veids, kura mērķis ir, balstoties uz vietējiem sociāliem, kultūras un dabas resursiem, piedāvāt tūristiem iespēju atpūsties vai izmantot tūristu mītnes lauku teritorijā” (LR tūrisma likums, LIAA, 1998).

Visi minētie tūrisma veidi ietver sevī izglītojošu funkciju, taču, ņemot vērā izglītojošā tūrisma pieprasījumu, tas var būt definēts, kā atsevišķs tūrisma veids. Daudzas valstis atzīmē izglītojošo tūrisma kā svarīgu un ātri augušo ekonomikas sektoru ar lielu potenciālu, kas var būt viens no reģionu sociāli – ekonomiskās vadības instrumentu.

Sakarā ar to, ka pieredzē balstītas mācīšanās kļūst arvien populārāka, dati liecina, ka izglītojošie ceļojumi ir kļuvuši par modernu tendenci (Chau, 2021).

Pētījuma mērķis ir izpētīt izglītojošā tūrisma jēdziena vēsturisko attīstību un izanalizēt izglītojošā tūrisma definīciju interpretāciju. Pētījuma uzdevumi:

1. Izpētīt jēdziena “izglītojošais tūrisms” definējumu citu autoru pētījumos.
2. Veikt definīcijas “izglītojošais tūrisms” analīzi.

Pētījumā izmantota zinātniskās literatūras izpētes metode. Zinātniski praktiskā novitātes pakāpe slēpjas autora mēģinājumā izcelt izglītības tūrisma principus caur informatīviem datiem par izglītības tūrisma jēdzienu un veidiem atbilstoši atzītām klasifikācijām.

### **“Izglītojošā tūrisma” jēdziena interpretācija** *Interpretation of the concept of “educational tourism”*

Tūrisma aktivitāšu aizsākumi parādījās senos laikos. Cilvēku pārvietošanas motīvi visbiežāk bija tādi faktori kā tirdzniecība, jaunu zināšanu gūšana, atklājumi, reliģija un atpūta.

Mūsdienās tūrisms ir nozīmīga pasaules saimniecības sastāvdaļa. M. Rozīte atzīst, ka “pēc Latvijas neatkarības atgūšanas tūrisms ir kļuvis par atzītu uzņēmējdarbības sfēru” (Rozīte, 1999).

Tiek uzskatīts, ka Eiropā daži izglītojošā tūrisma elementi parādījās 20. gadsimta otrajā pusē, kaut arī tā pirmsākumi ir meklējami XVII un XVIII

gadsimtā. Izglītojošais tūrisms tiek aizsākts kā izglītojošas izklaides tūres Eiropā, kas pazīstamas kā "Lielā tūre pa Eiropu" (Grand tour of Europe), kad britu aristokrātijas ceļojumi bija ļoti iecienīti un populāri. Tauners apgalvoja, ka ekskursijām ir milzīga ietekme uz Lielbritānijas mākslu un kultūru (Towner, 1985).

2004. gadā Pasaules tūrisma organizācija Tūrisma organizācija (World tourism organization) atzīmēja izglītojošā tūrisma nozares attīstības nepieciešamību, izmantojot dažādas izglītības priekšrocības un pieejamās metodes.

No ekonomikas viedokļa tūrisms ir īpašs tūristu materiālo preču, pakalpojumu un preču patēriņa veids, kas tiek identificēts kā atsevišķa ekonomikas nozare. Tā nodrošina tūristus ar visu nepieciešamo: transportu, izmitināšanu, pārtiku, kultūras un sociālos pakalpojumus, izklaidi. Daudzām valstīm tūrisms ir kļuvis par nozīmīgu valsts ieņēmumu avotu un ir viena no perspektīvākajām tautsaimniecības nozarēm, kurā izglītojošais tūrisms ir viena no perspektīvām tūrisma klastera specializācijām.

Lai definētu jēdzienu "izglītojošais tūrisms", ir jāņem vērā jēdzieni "izglītība" un "tūrisms" kā divi atsevišķi procesi.

Saskaņā ar LR tūrisma likumu "tūrisms ir personas darbības, kas saistītas ar ceļošanu un uzturēšanos ārpus savas pastāvīgās dzīvesvietas brīvā laika pavadīšanas, lietišķo darījumu kārtošanas vai citā nolūkā ne ilgāk kā vienu gadu." Savukārt, *tūrists* tiek definēts, kā "fiziskā persona, kura ceļo ārpus savas pastāvīgās dzīvesvietas ne ilgāk kā vienu gadu, uzturas sabiedriskā vai privātā mājvietā ne mazāk kā vienu nakti un apmeklētājā vietā neveic algotu darbu" (LR tūrisma likums, 1998).

Tūrisma jomas pamatuzdevumi, kas ir noteikti Tūrisma likumā, ir šādi: "nodrošināt tūrismam brīvas un vienlīdzīgas iespējas, celt tā ekonomisko efektivitāti un radīt jaunas darba vietas, kā arī veicināt iedzīvotāju labklājību; veicināt Latvijas integrāciju starptautiskajā tūrisma apritē; veicināt vietējā tūrisma attīstību un tūrisma pakalpojumu eksportu" (LR tūrisma likums, 1998).

Savukārt, saskaņā ar Izglītības likumu "izglītība — sistematizētu zināšanu un prasmju apguves un attieksmju veidošanas process un tā rezultāts. Izglītības process ietver mācību un audzināšanas darbību. Izglītības rezultāts ir personas zināšanu, prasmju un attieksmju kopums" (LR izglītības likums, 1998).

Izglītojošā tūrisma problēmām ir pievērsušies ārzemju zinātnieki Brent, Cooper, Samah, Ritchie, Pitman, Bodger, Voskresenskis, Lunins, Zorins, Kvartaļnovs, Chebotar, Bodger u.c.

Pētījuma ietvaros autore ir apkopojusi un analizējusi dažādu ārzemju zinātnieku jēdziena "izglītojošais tūrisms" definīcijas. Šajās definīcijās tiek atspoguļota "izglītojošā tūrisma" būtība un tiek izcelti tā veidojošie elementi. (skat. 1.tabulu)



1.tabula Jēdziena "izglītojošais tūrisms" definīciju apkopojums (autoru veidots)  
Table 1 Compilation of definitions of the term "educational tourism" (the authors)

Jēdziena "izglītojošais tūrisms" definīciju apkopojums pēc mērķa, laika, vietas un cilvēku skaita			
Mērķis	Laiks/periods+mērķis	Vieta+mērķis	Cilvēku skaits+vieta+mērķis
“Tūristu braucieni, ekskursijas, zinātkāres un citu izglītojošu interešu apmierināšanai.” (Zorin, Kvartalnov, 2015)	“Ceļojumi uz laiku no 24 stundām līdz 6 mēnešiem, lai iegūtu izglītību (vispārējo, speciālo, papildu), neiesaistoties darbībā, kas saistītas ar ienākumu gūšanu” (Lunin, 2009.)	“Ceļojumi uz ārzemēm izglītības iegūšanas nolūkos (valodas uzlabošanai, biznesa izglītības iegūšanai, speciālo disciplīnu apguvei” (Voskresenskij, 2008)	“Vienas personas vai grupu ceļojumi uz noteiktiem reģioniem un valstīm, lai saņemtu izglītības pakalpojumus saskaņā ar noteiktām programmām.”(Chebotar, 1997)
“Atpūtas veids, kura galvenais vai sekundārais mērķis ir apgūt svešvalodas, kulinārijas mākslu vai citas disciplīnas (ekonomiku, menedžmentu, mārketingu u.c.), kā arī apmierināt zinātkāri, pilnveidot prasmes un iegūt jaunu pieredzi konkrēta profesija vai darbības joma” (Shherbinina)	“Izglītojošais tūrisms ietver ekskursijas no 15 dienām līdz 3 mēnešiem ar mērķi pilnveidot prasmes vai padziļināt zināšanas noteiktās disciplīnās. Mūsdienās populārākās ir izglītojošas ekskursijas ar mērķi apgūt svešvalodas vai padziļināt zināšanas.” (Sanginov, 2012)	“Izglītojošais tūrisms ir saistīts ar ceļojumiem ar primāro vai sekundāro mērķi mācīties unikālā vidē.” (Arnason, Pitman, Richards, Ritchie, 2003; Stoner, 2014)	“Izglītojošais tūrisms attiecas uz jebkuru programmu, kurā dalībnieki ceļo uz kādu vietu kā grupa, kuras galvenais mērķis ir iesaistīties mācību pieredzē, kas ir tieši saistīta ar vietu.” (Bodger, 1998)
“Izglītojošs tūrisms ir nakšņošanas apmeklētāju un ekskursantu darbība, kam izglītība un apmācība - galvenais vai sekundārais ceļojuma mērķis.” (Ritche, 2003)	“Izglītības tūristi ir “personas vai grupas, kas ceļo un uzturas vietās ārpus savas ierastās vides ilgāk par 24 stundām un ne ilgāk par vienu gadu” tādos nolūkos kā mācības, uzņēmējdarbība, atpūta un citas aktivitātes.” (World Tourism organization, 2004)	“Izglītības braucienu dalībnieki mēdz doties uz galamērķi, lai apgūtu zināšanas, vai uz vietu, kas veicinās viņu turpmāko karjeru.” (Yang, Ayavoo & Ab Aziz, 2023)	
“Izglītojošais tūrisms (IT) ir tūrisma veids, kurā cilvēki ceļo, lai iegūtu jaunas zināšanas, prasmes vai atziņas saistībā ar noteiktu priekšmetu vai interešu jomu.” (Yang, Ayavoo, & Ab Aziz, 2023)			

Apkopojot dažādas izglītojošā tūrisma definīcijas, autore secina, ka jēdziens “izglītojošais tūrisms” tiek interpretēts dažādi, un ārzemju zinātniekiem nav vienots viedoklis un vienotas koncepcijas par jēdziena būtību. Jēdziena elementu izpēte nosaka šādas sakarības:

- *pēc ceļojuma laika, perioda*

(“no 24 stundām līdz 6 mēnešiem, no 15 dienām līdz 3 mēnešiem, ilgāk par 24 stundām”)

*Lunin, 2009, Sanginov, 2012, World Tourism organization, 2004*

- *pēc ceļojuma vietas*

(“Ceļojumi uz ārzemēm, mācīties unikālā vidē, ceļojumi uz noteiktiem reģioniem”)

*Voskresenskij, 2008, Árnason, 2010, Pitman, 2010, Richards, 2011, Ritchie, 2003, Stoner, 2014, Chebotar, 1997, Bodger, 1998*

- *pēc ceļojuma mērķa*

(zinātkāres un citu izglītojošu interešu apmierināšanai, apgūt svešvalodas, kulinārijas mākslu vai citas disciplīnas (ekonomiku, menedžmentu, mārketingu u.c.), apmierināt zinātkāri, pilnveidot prasmes un iegūt jaunu pieredzi, lai iegūtu izglītību (vispārējo, speciālo, papildu), pilnveidot prasmes vai padziļināt zināšanas noteiktās disciplīnās)

*Voskresenskij, 2008, Árnason, 2010, Pitman, 2010, Richards, 2011, Ritchie, 2003, Stoner, 2014, Chebotar, 1997, Bodger, 1998, Zorin, Kvartalnov, Shherbinina, 2015, Lunin, 2009, Sanginov, 2012.*

Visi autori līdzīgi definē izglītojošā tūrisma mērķi – izglītības (vispārējās, speciālās vai papildu), izglītības pakalpojumu iegūšanu caur dažādām programmām, aktivitātēm.

Taču daži autori akcentē izglītojošā tūrisma jomas- kulinārija, menedžments, ekonomika, kā vienu no galvenajām izglītojošā tūrisma jomām izceļot svešvalodas (Shherbinina, Sangvinovs, 2012).

Chebotara un Bodgera definīcijas ir visaptvērīgākās, tās iekļauj sevī visas trīs izglītojošā tūrisma komponentes – vietu, mērķi, cilvēku skaitu, kā nozīmīgu izceļot vietu. Bodgeram (1998) izglītības pakalpojumu vieta ir apzīmēta kā unikālā vide.

Starp ārvalstu pētījumiem, kas veltīti izglītojošā tūrisma problēmām, izceļas Ritchie (2003) fundamentālais darbs “Izglītojošā tūrisma vadība”. Tas sniedz zinātniekiem šādu definīciju: “Izglītojošs tūrisms ir nakšņošanas apmeklētāju un ekskursantu darbība, kam izglītība un apmācība - galvenais vai sekundārais ceļojuma mērķis.” Ričijs sadala izglītojošo tūrisma divos segmentos: "izglītība vispirms" (“education first”) un "tūrisms vispirms" (“tourism first”). Segments “izglītība vispirms”, kurā šis pētnieks iekļauj skolu ekskursijas, mācības valodu skolās un universitātēs, ietver ceļošanu, kuru galvenais mērķis ir izglītība un apmācība. Segmentā “tūrisms vispirms”, kas ietver ekoloģisko un kultūras

tūrismu, kā arī izglītojošo tūrismu pieaugušajiem, mērķtiecīga mācīšanās ir sekundārais ceļojuma motīvs (Ritche, 2003).

### **Izglītojošā tūrisma priekšnosacījumi ieviešanai Latgalē/ reģionos** **Prerequisites for the introduction of educational tourism in Latgale/regions**

Neskatoties uz to, ka Covid-19 ir būtiski ietekmējis izglītojoša tūrisma nozari, pētnieki un nozares profesionāļi ir pārliecināti, ka tam nākotnē būs liela nozīme. Izglītojošajam tūrismam ir vairākas iespējas nepārtrauktai attīstībai un uzlabošanai, kā arī ir būtiska pozitīva ietekme uz ekonomisko izaugsmi (Rong 2021, Shao-Wen Tang, 2021).

Latvijas ilgtspējīgas attīstības stratēģijā līdz 2030. gadam lauku tūrisms tiek piedāvāts kā nodarbinātības veids, kurš var kļūt par nozīmīgu alternatīvu, kas "palīdzētu uzturēt "dzīvus" Latvijas laukus." Stratēģijā ir uzsvērts, ka ir svarīgi veicināt mazo un vidējo biznesu, paredzot valsts finansējumu tūrisma nozares attīstībai, tai skaitā satiksmes un tūrisma infrastruktūras uzlabošanai. Kultūrvidē, pievilcīgs biotops, gleznainas ainavas, bioloģiskā daudzveidība, multikulturālā vide, kas raksturo Latgale reģionu, latgalisko tradīciju bagātība un kulinārais mantojums ir atzīti par spēcīgu faktoru unikāla tūrisma satura attīstībā, kam ir noteikts potenciāls kļūt par vienu no reģiona ekonomiskās attīstības stratēģiskajiem virzieniem (Ekonomikas ministrija, Latvijas tūrisma nozares analīze 2021).

Neatkarīgi no motivācijas līmeņa, tiekšanās pēc zināšanām ir galvenais izglītības tūrisma aspekts. Ir daudzi veidi, kā sasniegt šo mācību mērķi, tostarp ne tikai formāla mācīšanās ar ekspertu vadību, bet arī neatkarīga neformāla mācīšanās. Īpaši lauku apvidos tūrisma aktivitātes tiek uzskatītas par "gudru iespēju" lauku vides ilgtspējīgai attīstībai, un tām ir multiplikatora ietekme uz kopienas ekonomisko un sociālo dzīvi. Izglītojošā tūrisma aktivitātes veicina uzņēmējdarbību un efektīvu resursu sadali. Ceļojumi uz laukiem, kas sevī ietver izglītojošu funkciju, veicina lauksaimniecības dažādošanu, samazinot ienākumu atšķirības starp pilsētām un laukiem un pozitīvi ietekmē lauku iedzīvotāju skaita samazināšanos (Yang, Ayavoo & Ab Aziz, 2023).

Izglītības tūrisma nozarei ir svarīgi izprast patērētāju vajadzības un izmantot tās plānojot un izstrādājot tūrisma piedāvājumus. Tas var sniegt norādījumus galamērķa operatoriem, kas izdomā idejas brīvdienām, pēta idejas, izstrādā tūrisma maršrutus un to saturu, slēdz līgumus par nepieciešamajiem pakalpojumiem, izmitināšanu, transportu, gidēm, ceļojumu vadītājiem vai kūrorta pārstāvjiem utt., un pēc tam pārdod izveidoto paketi (Ohe, 2014; Petroman, Mirea, Lozici, Constantin, Marin & Merce, 2016).

Izglītības tūrisms lauku apvidos var sniegt ekonomisku un sociālu labumu. Tomēr problēma slēpjas faktā, ka galamērķa ceļojumu rīkotāji un vadītāji pastāvīgi saskaras ar izaicinājumu, vairāk un dziļāk izzināt klientu vēlmes un

vajadzības, piedāvājot kvalitatīvu pakalpojumu, kas sekmētu tūrisma biznesa ilgtspējību, nodrošinot stabilus ienākumus. Operatoriem ir nepieciešams noteikts kultūras un izglītības līmenis, lai apmierinātu patērētāju vajadzības. Turklāt operatoriem ir vajadzīgas plašākas perspektīvas un zīmola darbības zināšanas un prasmes. Ekonomiski mazattīstītajās valstīs, kurās ir augsti nabadzības rādītāji, ir liela praktiska nozīme izglītības tūrisma lauku apvidos pētīšanai, kas var sniegt daudz priekšrocību. Šāda veida pētījumi joprojām ir nepietiekami. Šī iemesla, kā arī nepietiekamas politikas atbalsta dēļ šajā jomā trūkst ekspertu (Yang, Ayavoo, Ab Aziz, 2023).

Saskaņā ar Mwesiumo, Halfdanarson un Shlopak (2022), tūristu interesei pārejot no masu tūrisma uz personalizētu tūrisma, lauku galamērķi var gūt vislielāko labumu, jo tie nodrošina piedāvājumus, kas apmierina pieaugošo pieprasījumu pēc autentiskas pieredzes, mijiedarbības ar vietējo kopienu un vietēji ražotām precēm un pakalpojumiem. Atšķirībā no pilsētu tūrisma, lauku tūrisms var nodrošināt integrāciju idealizētā vidē, piedāvājot aizbēgt no tādiem pilsētas stresa faktoriem kā piesārņojums, troksnis un mākslīgi un pārslogoti dzīves apstākļi (Kastenholz, Carneiro, Marques, & Lima, 2012). Lauku tūrisms var kļūt par ideālu izglītojošā tūrisma platformu, jo tam ir potenciāls mijiedarboties ar citiem tūrisma segmentiem un ar tūrisma nesaistītām nozarēm (McGladdery & Lubbe, 2017).

Mazie un vidējie uzņēmumi var veicināt ilgtspējīgu attīstību lauku tūrisma attīstību, kopīgi veidojot inovācijas ilgtspējai, veicinot sociāli kultūras ieguvumus ne tikai uzņēmumiem un to ieinteresētajām personām, bet arī lauku galamērķu kopienai un tās ilgtspējīgai attīstībai (Maziliauske, 2024).

Pētījumi liecina, pareizi izveidota tūrisma attīstības politika, veicina izglītojošo tūrisma, tādējādi veicinot ekonomisko izaugsmi ilgtermiņā (Matahir & Tang, 2017).

Lauku uzņēmējdarbība tiek uztverta kā viens no svarīgākajiem vietējās dzīves darba tirgus elementiem, kas aptver visu vietējo sabiedrību, ne tikai strādājošos lauksaimniecībā, tāpēc tieši lauki var kļūt par izglītojošā tūrisma platformu Latgalē.

Kā rāda citu valstu pieredze un pētījumi, šobrīd lauku tūrisma raksturo daudzfunkcionalitāte, kas tieši apvienota ar inovatīvām darbībām. Izceļas tūrisma piedāvājums, ko sniedz gan individuālie zemnieki, gan zemnieku saimniecību tīkli ar saimnieku profesionālo attieksmi pret savu darbu un līdz ar to arī augsto tūrisma pakalpojumu kvalitāti (Sin, Nowak, Bogusz, Kowalska & Janigová, 2020).

Poļu pētnieki Widawski, Krzemińska, Zaręba, Dzikowska (2023), kuri ir pievērsušies izglītojošā tūrisma tematikai, atzīst, ka lauki, viensētas, pļavas, meži un ezeri kļūst par vietu, kur norit izglītības process. Saimnieki, kuri dalās savās prasmēs un zināšanās, tiek nosaukti par skolotājiem. Pētnieki akcentē, ka lekciju un stundu vietā notiek mijiedarbība, kurā katrs dalībnieks jūtas kā daļa no vides.

Izglītojošo sētu piedāvājums praktiski nekad nav tikai par kultūras vērtībām vai tikai dabas vērtībām. Lielisks instruments cīņā par kultūras resursu uzturēšanu un izplatīšanu ir izglītība. Zināšanas ir pirmais un nepieciešamais solis cīņā par vērtību saglabāšanu. Zināšanas ir jānodod tālāk dažādos veidos, lai gan uzņēmējas, gan apmeklētāju kopienas apmeklētajai videi pieietu ilgtspējīgi. Viens no svarīgākajiem instrumentiem šajā izglītības procesā ir tūrisma piedāvājums lauku vidē, kā tas redzams no izglītības sētu piemēra; tas ir jēdziens, kas Polijas lauku vidē pastāv jau vismaz divus gadu desmitus un ir balstīts uz mācīšanu domāt ārpus rāmjiem (Widawski, Krzemińska, Zaręba, & Dzikowska, 2023). Lauku vidi veido pārsvarā zemnieki, kuru darbība tieši vai pastiprināti saistīta ar lauksaimniecisko ražošanu.

## **Secinājumi Conclusions**

1. Izpētot dažādu pētnieku definīcijas un atziņas par izglītojošā tūrisma aspektiem, var secināt, ka ir vērojama atšķirīga terminoloģiskā pieeja un interpretācija. Izglītojošā tūrisma galvenā motivācija ir vēlme mācīties, kas to atšķir no citiem tūrisma veidiem, kas koncentrējas uz atpūtu, izklaidi vai piedzīvojumiem. Mācīšanās var būt gan primārā, gan sekundārā izglītības tūrisma motivācija. Dažiem dalībniekiem primārā motivācija var būt jaunu zināšanu vai prasmju iegūšana konkrētā jomā, savukārt citiem mācīšanās var būt sekundārs ieguvums, kas uzlabo ceļošanas pieredzi.

2. Tūrisms, tai skaitā izglītojošais tūrisms ir viena no perspektīvākajām tautsaimniecības nozarēm. Izglītojošajam tūrismam ir vairākas iespējas nepārtrauktai attīstībai un uzlabošanai, kam ir būtiska pozitīva ietekme uz ekonomisko izaugsmi.

3. Lauku tūrisms var kļūt par nozīmīgu alternatīvu, kas var veicināt ekonomisko izaugsmi Latvijas laukus. Latgales plānošanas reģiona ilgtspējīgas attīstības stratēģijā 2015.–2030. gadam tiek uzsvērts, ka ir svarīgi veicināt mazo un vidējo biznesu, paredzot valsts finansējumu tūrisma nozares attīstībai, tai skaitā satiksmes un tūrisma infrastruktūras uzlabošanai.

4. Lauku uzņēmējdarbība tiek uztverta kā viens no svarīgākajiem vietējās dzīves darba tirgus elementiem, kas aptver visu vietējo sabiedrību, ne tikai strādājošos lauksaimniecībā, tāpēc tieši lauki var kļūt par izglītojošā tūrisma svarīgu platformu.

5. Mazie un vidējie uzņēmumi var veicināt ilgtspējīgu attīstību lauku tūrisma attīstību, kopīgi veidojot inovācijas ilgtspējai, veicinot sociāli kultūras ieguvumus ne tikai uzņēmumiem un to ieinteresētajām personām, bet arī lauku galamērķu kopienai un tās ilgtspējīgai attīstībai.

## Summary

There is no single interpretation of the concept of educational tourism, as it is influenced by different contexts, goals and motivations. Unlike other types of tourism, where the main focus is on recreation, entertainment and adventure, the main feature of educational tourism is the desire of tourists to acquire knowledge - formal or informal - during the trip. Learning, such as the acquisition of new knowledge, skills and abilities, can enhance the tourist experience during travel and can be both a primary and a secondary goal of educational tourism.

Many researchers and industry specialists point out that educational tourism has many opportunities and potentials in the future, improving both the national education policy and the cultural and economic environment.

Latvia's sustainable development strategy until 2030 emphasizes the export of tourism related aspects. Rural tourism is emphasized as an alternative form of employment, which, by re-profiling rural farms, would help maintain "alive" Latvian countryside. The strategy emphasizes the need to promote small and medium-sized businesses, improve traffic and tourism infrastructure. It is tourism that is one of the areas of development for which state support is intended.

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# ENHANCING PROFESSIONAL COMPETENCY VALIDATION FOR EDUCATIONAL WORKERS (leveraging international experience for Ukraine)

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**Abstract:** *The exchange of knowledge and experiences between nations has become imperative for sustainable development and progress today. Ukraine nowadays seeks to enhance the validation process for professional competencies of educational workers. Drawing upon the practical experiences of countries like China, various European nations, the United States, can offer invaluable insights and strategies to optimise Ukraine's educational system. The article aims to present the experience of different countries that by adopting it for education workers' professional competency validation equips Ukraine with a comprehensive toolkit to address the challenges. In particular, the validation of PR China's (known for its emphasis on rigorous educational standards and competency validation processes), EU's (diverse educational systems of UR countries offer a rich tapestry of approaches to competency validation), US (accreditation processes and performance-based assessments), Baltic Countries (progressive education policies and commitment to quality assurance) experience, can not only enhances the quality and innovation within Ukraine's educational system but also positions Ukrainian professionals on the global stage. The article as well pays attention not only to benefits that this or that abroad professional validation systems adoption can give Ukraine nowadays, but also makes prognoses as to its practical possibility and possible difficulties.*

**Keywords:** *cross-cultural learning, educational workers, international experience, professional competency, validation*

## Introduction

In the field of education, ensuring that educational workers possess the requisite competencies is essential for cultivating effective teaching and learning environments. Professional competency validation serves as a systematic process aimed at assessing, acknowledging, and enhancing the skills, knowledge, and abilities of educational professionals and serves various purposes aimed at



enhancing the quality of education (Sukadari, 2019). Against the backdrop of globalisation and rapid transformations in the educational landscape, Ukraine finds itself at a critical juncture in its pursuit of educational excellence. Enriching professional competency validation for educational workers is imperative to meet the evolving needs of the education sector and ensure the quality of teaching and learning experiences. The aim of the article is to outline the issue of validating the professional competencies of educators in a broad context, highlighting its significance for contemporary Ukraine. Additionally, it aims to examine the approaches and practices employed in other nations, including EU countries, the USA, and the PRC, with a view to identifying tools and methodologies applicable to Ukraine's context. In crafting this article, the authors used the research methods commonly found in compelling works within the realms of comparative pedagogy and educational organisational theory: literature review (to analyse the exemplary practices, obstacles, and gaps in the realm of validating educators' professional qualifications as a scientific category and a practical issue), examples analysing (to understand which abroad qualification validation practices fit Ukraine today), examination of institutional documents (to see the possibilities and potential of abroad practices to be implemented into the educational practice of Ukraine). Furthermore, given that all authors of the article are actively employed within universities and possess experience in both domestic and international educational settings, as well as in collaborating with students and colleagues from abroad within Ukraine, the method of personal experience was also employed to help in assessing the plausibility and validity of approaches and provisions found in contemporary scientific and normative literature, particularly within Ukraine, concerning the validation of professional achievements, particularly among educators. This combination facilitated a comprehensive exploration of the identified issue, thereby positioning the article as a springboard for more extensive investigations into the efficacy of various components of foreign practices in validating professional competencies of educational workers in contemporary and post-conflict Ukraine.

### **Literature review**

In crafting this study, the authors drew upon a variety of literature sources, encompassing scientific articles, online media publications, and data from official national and regional government websites. The scientific research referenced includes works by esteemed authors such as R. Thilakaratne, T. Kvan (2006), Sukadari (2019), M. Strong, G. Burkholder, E. Solberg, A. Stellmack, W. Presson, J. Seitz (2020), N. Schaper (2017), W. Fan, Y. Gao, N. Zhao, Y. Tong (2021), S. Amani, Z. Dolatabadi, T. Bardsiri, M. Nouri, J. Saraji, M. Poursadeqiyani, B. Khedri, A. Mohammadzadehaghdam, Z. Zamani, M. Karimzadeh (2022), along with official guidelines such as "The Guidance and Validation Practitioners'

Competence Profile" (2022) [GVPCP], "The Validation of Competences: The Guidance Process" (2022) [VCGP], and contributions by N. Kiilakosk, T. Basarab (2022), as well as "EU competency framework for the management and implementation of the ERDF and Cohesion Fund: user guidelines for the EU competence framework and self-assessment tool" (2017) [EUCFMI]. This literature was instrumental in providing a comprehensive overview of the issue, detailing the various methods employed in validating the professional competencies of pedagogical workers, which are prevalent across European countries, the United States, and the People's Republic of China. Additionally, insights specific to certain countries' validation practices were gleaned from publications in online media, such as those authored by A. Diaz (2023) for the USA and R. Xu, Y. Yang (2022) for China. Furthermore, valuable data and procedural insights were extracted from official government websites, including the Official site of the Department of Further and Higher Education, Research, Innovation and Science of Ireland [DFHERISI], the Official site of the International Affairs Office U.S. Department of Education [IAOUSDE], the Official site of the People's Government of Shandong Province of the PR China, and the Official site of the Embassy of the People's Republic of China in the United States [EPRCUS]. These sources shed light on country-specific validation procedures and governmental approaches to these processes.

### Methodology

This article sets out to outline the general features of the existing problem, as well as to present the authors' own considerations regarding the specific issue. To accomplish this, a mixture of empirical and theoretical scientific methods, customary in applied research within pedagogical and humanitarian sciences, was utilised. At the heart of this approach lies the *principle of anticipatory reflection*, which underscores the continued relevance of the challenge concerning the validation of professional competence qualifications for pedagogical workers in Ukraine and aids in forecasting its future significance and priority. Conducting a *literature review* spanning both national and international levels provided the authors with valuable insights into exemplary practices, obstacles, and gaps in the realm of validating educators' professional qualifications. *Analysing examples* from other countries regarding their validation methodologies allowed the authors to draw conclusions regarding the feasibility and potential applicability of such practices in Ukraine, while also pinpointing promising avenues and potential hurdles. Moreover, an *examination of institutional documents* within the education sector, such as reports, guidelines, and materials pertaining to competency confirmation, yielded valuable contextual information regarding the models and principles of validating educators' professional competences practiced in selected countries. By employing a combination of these scientific research

methods, the authors acquired a comprehensive understanding of the challenges associated with enhancing the validation of professional competence among educational workers.

## **Research results**

Effective professional competency validation serves as a cornerstone for educational quality assurance, ensuring that educational workers possess the requisite skills, knowledge, and abilities to deliver high-quality instruction. By establishing clear standards and assessment criteria, a country can constantly enhance and guarantee the professionalism and effectiveness of its educational workforce (as the product that these people and the system in general produce), ultimately leading to improved student outcomes and national educational attainment. Professional competency validation in different countries encompasses various methods and tools aimed at assessing the proficiency of educational workers in their respective roles. (Schaper, 2017). In some countries it involves evaluating a range of competencies, including pedagogical skills, subject knowledge, classroom management abilities, communication skills, and the capacity to adapt to diverse learning needs. In other countries the validation processes may include self-assessment, peer evaluations, observations, portfolios, standardised assessments, and professional development activities. The issues, the country pays attention to while establishing a validation system, are quite unique for each country though the aim of this process remains intangible all over the world: to guarantee the appropriate level of the educator and to legalise the professional's documents to make him/her sufficient for the educational work in the particular country with the skills and knowledge gained in the other educational system (with the aims, methods and principles that can change a lot from the ones we have here).

The concept of professional competency validation for educational workers traditionally evolves in response to changing educational paradigms and societal demands at the particular territory in a particular historical moment. Historically, teacher certification and licensure served as the primary means of ensuring educators' competence. However, these traditional approaches have gradually expanded to incorporate more comprehensive and dynamic validation processes. (Amani et al., 2022). In the latter half of the 20th century, with the emergence of competency-based education and outcome-based assessment models, there was a shift toward more explicit and measurable standards for educator competence. This led to the development of competency frameworks and assessment tools tailored to the specific needs and contexts of different educational settings.

Today across European countries there are several kinds of educational workers' (in particular) competence validation procedures that are commonly used and their forms are as follow:

*Portfolio Assessment:* educational workers compile evidence of their skills, knowledge, and achievements in a portfolio. This evidence may include certificates, performance reviews, and examples of work. The portfolio is then assessed against predetermined criteria. Such procedures are traditionally used in Portugal, Germany, Netherlands and each educational institution is to decide by itself whether they are satisfied with this or that professional competence level or not. This kind of procedure is used mainly for the qualifications and education documents gained abroad. (Thilakarathne & Kvan, 2006). In Lithuania, Latvia and Estonia such kind of validation is also used through the state authorities which, by its form, closes it to the below mentioned Assessment Centres' activity;

*Peer Review:* Colleagues assess an educational worker's competence based on observation, feedback, and discussion. This process often involves structured observation sessions and peer feedback sessions. This type of qualification validation is common for United Kingdom, Finland, Sweden for the qualifications and education documents gained abroad and also popular all over the EU countries for the inner country's education staff rotation or even inner-institution rotation;

*Competency-based Interview:* educational workers in Ireland, Spain, France are to participate in interviews where they demonstrate their knowledge, skills, and attitudes relevant to their role. Interview questions are designed to assess specific competencies required for the job. Usually such interviews are organised by the authorised certification centres which later recommend this or that worker to a particular educational institution for the further job. Such Centres as well have the attorney to certify all the qualification in the sphere of education gained abroad with the analogues typical for the local grade system (DFHERISI, 2022);

*Assessment Centres,* which are typical for Belgium, Italy, Poland, engage educational workers in a series of tasks, simulations, and exercises designed to assess their competencies in various areas. These may include role-plays, case studies, and group discussions. this procedure, accompanied with the legalised documents from the abroad education institution, gives such Centres an opportunity to provide the candidate with the local documents equal to the qualification gained abroad (Kiilakosk & Basarab, 2022);

*Work-Based Assessment:* in Denmark, Austria, Greece the professional competence of the candidate is assessed through direct observation of the educational worker's performance in their workplace. This may involve supervisors or mentors evaluating the worker's skills in real-world settings. Thus the professional internship for a candidate gained education or professional skills abroad is completely equal with the local job seekers (VCGP, 2022). This internship is valid for the particular education institute and is not countable while the educator changes the working place. The only difference is in the time needs for the institution to make its decision over the candidate: it can be just 1 presentation lesson or a half year internship. (Strong et al., 2020).

These procedures may vary in their specific implementation and emphasis across different countries in Europe, but they all serve the common goal of ensuring that educational workers possess the necessary skills and knowledge to effectively perform their roles. In recent years, advancements in technology have also influenced the validation of professional competencies, with the integration of digital portfolios, online assessments, and data analytics to streamline the validation process and provide more timely and personalised feedback to educators (EUCFMI, 2017). Quite an interesting form of such a digital validation system for educational workers can be seen in Estonia on the example of Estonian Education Information System (EHIS). For initial validation of qualifications (including those obtained abroad), the candidate must upload a specified package of documents to the system and receive a Certificate, which will give him/her the right to apply to other structures and directly to educational institutions to obtain a job. Usually this Certificate is enough for the education practice in Estonia. However, under certain conditions (for example, the specialty specified in the diploma does not fully correspond to the content of pedagogical activity), the educational institution may assign the candidate additional validation procedures from a separate aspect (competency-based interview or work-based assessment) or contact the Estonian Quality Agency for Higher and Vocational Education (EKKA) for further guidance (GVPCP, 2022).

In the United States, professional competence validation procedures for educational workers vary by state and are often overseen by state education departments or specific professional organisations. In California, New York, Texas educational workers must pass standardised exams covering subject matter knowledge and teaching skills. These exams are administered by state education departments or testing agencies (such as California Commission on Teacher Credentialing, New York State Education Department, Texas Education Agency etc.). (Lucas, 2020). Continuing Education and Professional Development programs are seen as a part of professional competence validation system and are compulsory for educators in such states as Ohio (administered by the Ohio Department of Education) and North Carolina (administered by the North Carolina Department of Public Instruction). There educational workers are to participate in ongoing professional development activities, workshops, and courses to maintain and enhance their teaching skills and knowledge (IAOUSDE, 2024). Usually the abroad gained qualification educators need (if they want start their educational practice in the US not as a "visiting professor", but as a part of the team) after the educational documents` legalising procedure (a legal procedure goes under the Ministry of Education and Ministry of Foreign Affairs of America) needs to pass both above mentioned procedures to be seen as a qualified professional in the sphere of education in the US. (EPRCUS, 2023). In Georgia and Michigan educational workers are to demonstrate their teaching skills and knowledge to state educational authorities through performance-based

assessments, which may include creating and delivering lesson plans, analysing student data, and reflecting on teaching practice (institutions in charge are Georgia Professional Standards Commission and Michigan Department of Education). Also such validation activities as Practicum or Student Teaching (similar to the EU pedagogical internship or work assess approach), Professional Portfolios and Performance Assessments are widely used all over the US. All the above mentioned procedures and approaches are mainly used for inner country rotation or a part of job seeking for the educators that gained their qualifications and skills abroad (especially in the educational institutions with private form of ownership). (Diaz, 2023)

Recognising the pivotal role of highly qualified teachers in advancing the Chinese state and society, the leadership of the modern People's Republic of China (PRC) has implemented stricter procedures for validating the qualifications of pedagogical workers obtained from foreign educational institutions over the past five years. Notably, only education and qualification documents acquired from state educational institutions are eligible for validation. Documents issued by institutions under different ownership structures, such as private, municipal, or communal, are not considered and are not recognised within the country. This policy extends to educational institutions not included in the Official List of Cooperation Educational Institutions approved by the Ministry of Education of China. (Fan et al., 2021). Educational workers with foreign qualifications must undergo a qualification recognition process to ensure alignment with Chinese standards. This process is primarily managed by the China Academic Degrees & Graduate Education Development Center (CDGDC) or the China Higher Education Student Information and Career Center (CHESICC). Since 2022, the mandatory document submission package to these bodies includes professionally translated versions into Chinese of 1-3 scientific articles authored by the candidate for the defence of a scientific dissertation abroad. Candidates holding a PhD in pedagogy or educational management may face additional requirements, including the presentation of academic achievements for each semester of study in specialised subjects at the graduate school. This procedure typically involves submitting an official application to the university where the candidate obtained their qualifications, from CHESICC and the foreign university are given a strict three-day window to provide formal responses; failure to do so results in disregarding the application. In cases where doubts persist after initial validation attempts, candidates may be requested to submit a translated portion of their dissertation research for anonymous analysis by leading Chinese experts in the field. These submissions are reviewed anonymously by the scientific committee of a prominent pedagogical university in the People's Republic of China, further ensuring the rigour and integrity of the validation process. (PGSPPRC, 2024).

Educational workers may need to pass teacher certification exams to demonstrate their subject matter knowledge and teaching skills. These exams,

known as Teacher Certification Exams, are commonly administered by provincial or municipal education authorities, such as the Ministry of Education (MOE) or the Provincial Department of Education. This procedure also applies to educators seeking to advance their qualification levels. Interviews and Assessments are typical verification procedures wherein candidates undergo evaluations of their teaching abilities and competencies. These assessments may be conducted by educational institutions, government agencies, or professional organisations. Similarly, Continuing Professional Development programs, organised by educational institutions, government agencies, or professional associations, are undertaken every five years to maintain the educators' proficiency. The Portfolio Review approach, familiar in the EU and US, has evolved into Work Experience Verification in China. Candidates are required to provide evidence of their work experience as educators, including reference letters, employment contracts, and teaching evaluations. (Xu & Yang, 2022). This verification process is typically overseen by educational institutions or government agencies at regional and local levels.

Given recent developments in Ukraine's education sector, particularly the increasing involvement of professionals from diverse backgrounds, there is a pressing need to adapt competency validation mechanisms that are practical, coherent, and equitable. The expanding pool of educational workers mandates robust validation processes to ensure that all individuals engaged in the educational sphere possess the requisite pedagogical skills and competencies. Furthermore, reconciling foreign qualifications, as well as knowledge and skills acquired through online education, non-formal education, and self-education (both within Ukraine and globally), with Ukrainian state standards highlights the importance of establishing transparent and fair validation procedures. By acknowledging and accrediting these qualifications in alignment with Ukrainian standards, Ukraine can capitalise on the expertise and experiences of a new generation of professionals, thus enhancing its education system.

Additionally, coordinating validation procedures for professional and educational qualifications between Ukraine and EU countries, the USA, and other nations will facilitate the integration of specialists, including Ukrainian refugees who currently reside abroad and plan to return to Ukraine after the war with Russia (which began in February 2022) concludes. Many of these individuals acquire education and professional qualifications according to local programs, which may not always align seamlessly with Ukrainian standards. Furthermore, by positioning itself as an international educational hub, Ukraine extends educational services to citizens worldwide. Harmonising norms and standards regarding qualifications obtained in Ukraine, including additional qualifications and those from non-formal education, including within Ukrainian private educational institutions, will greatly simplify validation procedures for such documents and qualifications in students' home countries or elsewhere globally.

This alignment will undoubtedly enhance Ukraine's reputation and increase recognition of its scientific and pedagogical potential on the global stage.

## Conclusions

Professional competency validation for educational workers is a multifaceted process aimed at evaluating, acknowledging, and refining the skills and knowledge of educators. It ensures that educators adhere to established standards, facilitating continuous professional development, and upholding accountability and transparency. This validation is instrumental in enhancing the overall quality of education. As educational paradigms evolve, so too must the approaches to professional competency validation, adapting to meet the dynamic needs of learners and society. Enriching professional competency validation for educational workers in Ukraine is paramount for fostering educational excellence and addressing the diverse needs of its evolving education landscape. By leveraging the positive examples set by EU countries, China, and the USA, Ukraine can implement tailored validation mechanisms. Embracing professionals from varied backgrounds and reconciling foreign qualifications will fortify Ukraine's education system, ensuring a brighter future for its students and society at large.

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# MEDICĪNAS PERSONĀLS KĀ SOCIĀLI ATBILDĪGAS ZAĻĀS PĀREJAS ATSLĒGA VESELĪBAS APRŪPES NOZARĒ

## *Medical Personnel as the Key to Socially Responsible Green Transition in the Healthcare Sector*

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**Abstract.** *To implement the socially responsible green transition in the Healthcare sector, it is essential to involve competent and educated personnel/staff. Article 48 of the Medical Treatment Law (Ārstniecības likums) of the Republic of Latvia stipulates that a medical practitioner has a duty to regularly improve his or her professional qualifications. Article 1 also defines improvement of professional qualifications as part of post-graduate education in a specific profession or specialty, which occurs in accordance with a freely selected education program, though the content and time of acquisition of which is not regulated. However, it must be noted that almost all programs offered by the Ministry of the Health of the Republic of Latvia for the improvement of practitioners' professional qualifications refer to the acquisition of skills and knowledge necessary to improve the process of treating patients. Although various international and national regulatory acts determine the obligations of state institutions to include the green transition into their operations, the involvement of the institution's employees is not discussed. This study aims to analyze and reflect on the competence of medical personnel and students regarding patient treatment and to analyze the compliance of the regulations of the Cabinet of Ministers with international and national regulations related to the creation of a socially responsible and sustainable state. UN Sustainable Development Goal Nr.4 "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" includes the necessity to ensure that all trainees acquire the knowledge and skill needed to promote sustainable development, including education regarding sustainable development and sustainable lifestyle. Within the scope of the research examples of positive foreign green transition practices will be evaluated. The results obtained within the framework of the research indicate the need to develop specific guidelines for the education of medical personnel, regarding the implementation of a socially responsible green transition in the healthcare sector, ensuring quality education in terms of promoting sustainable development.*

**Keywords:** *Education, green transition, healthcare, socially responsible, sustainability.*

## Ievads *Introduction*

Pēdējās desmitgades laikā aktualizējusies ar klimata pārmaiņu radīto seku novēršanu saistītā problemātika, kā arī tiek veicināta šajā jomā sociāli atbildīga un ilgtspējīga valstu iestāžu, uzņēmumu un citu organizāciju darbība. Pieņemti vairāki starptautiska un Eiropas līmeņa normatīvie tiesību akti, piemēram, Eiropas zaļā kursa (*The European Green Deal*) dokumenti, ANO Ģenerālās asamblejas 2015.gada 12.augusta rezolūcija “Mūsu pasaules pārveidošana: ilgtspējīgas attīstības programma 2030.gadam”, kurā ietverti arī 17 Ilgtspējas attīstības mērķi (*UN 17 Sustainable Development Goals*), u.c. Arī Latvijā šie starptautiskie dokumenti ietverti Latvijas likumos, MK noteikumos un pašvaldību saistošajos noteikumos.

Pētījumi liecina, ka tieši veselības aprūpes iestādes ievērojami veicina globālās oglekļa emisijas. Piemēram, Francijā veselības aprūpes sektors rada vairāk nekā 46 miljonus tonnas CO<sub>2</sub> izmešu, kas ir teju 8% no visu kopējā emisiju apmēra, taču Apvienotajā Karalistē Nacionālā Veselības Dienesta padotībā esošo iestāžu radīto CO<sub>2</sub> izmešu apjoms sastāda aptuveni 25% no kopējā publiskā sektora radīto CO<sub>2</sub> izmešu apjoma jeb 18 miljonus tonnas. Savukārt, attiecībā uz medicīnas atkritumu apsaimniekošanu, izmaksas pieaugs no 6.8 miljardiem USD 2020.gadā līdz 9 miljardiem USD 2025.gadā (Vallée, 2024).

Cīņā ar ārstniecības iestāžu radīto kaitējumu apkārtējai dabai, izstrādāts koncepts “Zaļā Slimnīca”. Koncepta mērķis ir koncentrēties uz resursu efektivitātes optimizēšanu, samazināt slimnīcu ietekmi uz apkārtējo vidi. Tajā ietverta atjaunojamās enerģijas integrācija, ilgtspējīgu materiālu izmantošanu slimnīcu celtniecībā, viedās ēku pārvaldības sistēmas iestrādi slimnīcu apsaimniekošanā, u.c. (Vallée, 2024).

No veiktajiem pētījumiem izriet daļējs risinājums sociāli atbildīgas zaļās pārejas nodrošināšanai veselības aprūpes nozarē, tomēr šie pētījumi izvērtē tikai dažas, specifiskas un šauras problēmas, kas lielākoties attiecas tikai uz slimnīcu vadību rīcības kontroli, taču netiek apskatīta medicīnas personāla loma, nodrošinot sociāli atbildīgu, ilgtspējīgu veselības aprūpes sniegšanu.

Šī pētījuma mērķis ir izvērtēt Latvijas tālākizglītības kvalitāti, attiecībā uz ārstniecības personu zināšanām un prasmēm, nodrošinot sociāli atbildīgu un “zaļu” veselības aprūpi.

Pētījuma objekts ir starptautiskās un nacionālās tiesību normas un attiecīgi radušās tiesiskās attiecības, kas saistītas ar ārstniecības personu izglītošanu par sociāli atbildīgas un “zaļās” veselības aprūpes sniegšanu.

Pētījuma izstrādes gaitā tiks izmantotas tādas pētījuma metodes kā zinātniskās literatūras un normatīvo dokumentu apkopošana un analīze, salīdzināšanas metodes, vēsturiskā metode, indukcijas un dedukcijas metodes un izziņas metode, kā arī tiks pielietotas tiesību normu interpretācijas metodes.

Pētījuma ietvaros izmantoti recenzēti zinātniskie raksti, kas indeksēti SCOPUS, PubMed, Directory of Open Access Journals (DOAJ) un JSTOR. Pētījuma temata aktualizācijai izmantots viens zinātniskais raksts primpublicācijas procesā, kas vēl nav ticis recenzēts.

**Jēdzienu “sociāli atbildīgs” un “zaļā pāreja” definīcijas un  
to savstarpējā saistība**  
*Definitions of “socially responsible” and “green transition” in addition to  
their interrelationship*

Kembridžas vārdnīcā jēdziena “sociāli atbildīgs” būtība izskaidrota kā jebkura rīcība, kas tiek veikta tādā viedā, kas nav kaitīga sabiedrībai vai videi (Cambridge Dictionary, N.d.).

Apskatītā definīcija ir vispārināta, tādēļ, lai izprastu sociāli atbildīgu rīcību, nepieciešams apskatīt, kādos apstākļos minētais jēdziens tiek pielietots praksē. Par izskaidrojošu piemēru kalpo Latvijas Republikas Satversmes tiesa atziņa, ka no sociāli atbildīgas valsts principa izriet valsts pienākums rūpēties par taisnīgu sociālo kārtību, mazinot sabiedrībā sociālās atšķirības, sekmējot sociālo iekļaušanu un katrai iedzīvotāju grupai sniedzot iespēju dzīvot tādu dzīvi, kas atbilst cilvēka cieņai (Latvijas Republikas Satversmes tiesas 2020.gada 10.decembra spriedums lietā Nr.2020-07-03, 15.1 punkts).

Savukārt, attiecībā uz sociāli atbildīgu uzņēmumu, iepriekš veiktos pētījumos ietverta definīcija, nosakot, ka sociāli atbildīga uzņēmuma rīcība ņem vērā ieinteresēto pušu cerības uz ilgtermiņa ekonomisko, sociālo un vides aizsardzības labklājību (De Roeck & Farooq, 2018).

Tādējādi, apkopojot iepriekšminētos termina “sociāli atbildīgs” skaidrojums, darba autori piedāvā savu termina definīciju, attiecībā uz ārstniecības iestāžu darbību. Sociāli atbildīga iestādes rīcība ir uzskatāma tāda, kas ne tikai rūpējas par pacientu sociālo kārtību, novēršot sociālo nevienlīdzību, bet arī nodrošina tādu iestādes darbību, kas sekmē apkārtējās vides klimatneitralitāti.

Attiecībā uz jēdzienu “zaļais kurss”, ņemams vērā Eiropadomes un Eiropas Savienības Padomes politikas iniciatīvu kopums “Eiropas zaļais kurss”, kura mērķis ir veikt zaļo pārkārtošanu ES līdz 2050.gadam, panākot klimatneitralitāti, tādējādi palīdzot ES pārveidoties par taisnīgu un pārticīgu sabiedrību ar modernu un konkurētspējīgu ekonomiku. Eiropas zaļais kurss ietver sekojošo - samazināt emisijas, nodrošināt ES dalībvalstu sabiedrību klimatnoturību, pielāgot civilās aizsardzības sistēmas, atjaunot Eiropas bioloģisko daudzveidību, izstrādāt ilgtspējīgu ES pārtikas sistēmu, atbalstīt rūpniecību, novērst ekonomiskās izaugsmes sasaisti ar resursu izmantošanu, izvērtēt visu bateriju aprites cikla posmus, izstrādāt taisnīgu pārkārtošanās mehānismu, atbalstīt tīrāku enerģijas avotu attīstību un izmantošanu, sekmēt ilgtspēju sekmējošu ES ķīmikāliju

stratēģiju un izveidot meža stratēģiju, to apsaimniekošanai, atmežošanai un bioloģiskās daudzveidības palielināšanai (Eiropas zaļais kurss, 2023).

Pētījuma ietvaros tiks ņemti vērā arī ANO 17 Ilgtspējīgas attīstības mērķi (turpmāk ANO mērķi), proti, ANO Ģenerālās asamblejas 2015.gadā 12.augustā pieņemtās rezolūcijas ietvaros minētie mērķi, piemēram, novērst nabadzību, nodrošināt labu veselību un labklājību, mazināt nevienlīdzību, veikt steidzamus pasākumus, lai cīnītos pret klimata pārmaiņām un to ietekmi, utt. (Apvienoto Nāciju Organizācijas samita noslēguma dokumenta projekts attīstības programmas pieņemšanai laikposmam pēc 2015.gada, 2015).

Pētījuma ietvaros termins “zaļā pāreja” attiecībā uz veselības aprūpes nozari, definēts kā iestādes rīcība, kas sekmē apkārtējās vides klimatneitrāli un nodrošina pacientu ietverošu aprūpi, novēršot nevienlīdzību vai atšķirīgu attieksmi pret salīdzināmā situācijā esošām personām.

No augstāk norādītā secināms, ka apkopojot pētījuma ietvaros izmantotos terminus “sociāli atbildīgs” un “zaļā pāreja”, tie savstarpēji saistīti tieši ar Eiropas zaļā kursa un ANO mērķu palīdzību. ANO mērķi pieprasa sociāli atbildīgu rīcību, savukārt, Eiropas zaļajā kursā ietvertie mērķi veicina uz klimatneitrālas vides balstītu zaļo pārkārtošanos. Līdz ar to ārstniecības iestādes rīcībai, nodrošinot sociāli atbildīgu zaļo pāreju veselības aprūpes nozarē, jāatbilst Eiropas zaļajam kursam un ANO mērķiem.

### **Ārzemju labās prakses analīze** *Analysis of foreign good practices*

Nodrošinot pāreju uz ekoloģiski ilgtspējīgu veselības aprūpi, kā galveno prioritāti nepieciešams atzīt pašreizējās stratēģijas veselības aprūpes darbinieku izglītošanu un apmācību, tostarp, nepieciešams nodrošināt konkrētu tehnisku prasmju apgūšanu (Stanford, Barna, Gupta & Mortimer, 2023).

Pētījuma ietvaros autori vērs uzmanību uz pilsētas Ņūkasla pie Tainas, Anglijā labo praksi. 2019.gadā tika izstrādāta Klimata ārkārtas situācijas stratēģijas dokuments 2020.-2025.gadam (Climate Emergency Strategy 2020-2025 (CES), 2019).

Stratēģijas dokumentā norādīts, ka Lielbritānijas Nacionālais Veselības Dienests (*National Health Service*, turpmāk - NHS), rada vairāk nekā 5% no Lielbritānijas kopējā oglekļa pēdas nospieduma. Tieši tādēļ ir svarīgi, ka veselības aprūpes sistēmas un iestādes ieņem vadošu lomu cīņā ar klimata pārmaiņām un to radītajām sekām (CES, 2019).

Stratēģijas dokumenta mērķis ir gan uzlabot ārstniecības iestāžu ēku celtniecību un samazināt neatjaunojamās enerģijas izmantošanu, izvēloties atjaunojamo un dabai draudzīgo enerģiju, gan izglītēt ārstniecības iestāžu darbiniekus, tādējādi iedvesmojot un informējot medicīnas personālu un citus iestāžu darbiniekus par ilgtspējīgas veselības aprūpes nodrošināšanu.

CES dokumentā ietverta arī izstrādāta konkrēta pārvaldības struktūra. Tā ir daudznozaru komiteja, kuras pārstāvji ir medicīnas māsas, nekustamo īpašumu speciālisti, ārsti, iepirkumu lietu speciālisti, finansisti, farmaceiti, IT speciālisti un pacientu pārstāvji. Komitejas mērķis ir pārvaldīt stratēģijas dokumenta iestrādes progresu, izglītot ārstniecības iestāžu vadību personālu, medicīnas personālu un citus ar ārstniecības iestāžu darbību saistītās personas (CES, 2019).

Secināms, ka Nūkaslas pie Tainas rīcība, izstrādājot CES ir konkrēts solis, lai nodrošinātu sociāli atbildīgu zaļo pāreju veselības aprūpes nozarē. Saprotams, ka daļēji zaļo pāreju var nodrošināt ārstniecības iestāžu vadība, proti, attiecībā uz enerģijas avota izvēles veida vai iestādes ēku celtniecībā izmantoto materiālu izvēli, lēmumu nav kompetents pieņemt medicīnas personāls. Savukārt, pacientu iekļaujošu un vienlīdzīgu veselības aprūpi var nodrošināt tikai izglītots medicīnas personāls.

Savukārt, Serra Gaucha reģionā, Brazīlijā, apskatīti medicīnisko atkritumu apsaimniekošanas problēmjaudājumu risinājumi. Attiecīgajā pētījumā norādīts uz konstatētajām aktuālajām problēmām Brazīlijā, t.i., slimnīcas var kļūt par epidēmijas izraisītājam ne tikai tāpēc, ka cietie atkritumi pārnēsā lielu un dažādu slimību skaitu, bet arī tāpēc, ka slimnīcas rada ievērojamu daudzumu bīstamo atkritumu. Slimnīcai, veicot atkritumu apsaimniekošanu, jāiekļauj visi procesa posmi, proti, jāsāk ar apsaimniekošanas materiālo un fizisko resursu apzināšanu un plānošanu, kā arī jāveic apsaimniekošanas procesā iesaistīto personu apmācība. No minētā pētījuma rezultātiem, veicot slimnīcu apsekošanu pētījuma ietvaros, izriet, ka slimnīcas, nodibinot darba tiesiskās attiecības, veic obligātās apmācības, tostarp, iekļaujot apmācībās atkritumu šķirošanas programmu (Dorion, Severo, Olea, Nodari & De Guimares, 2012).

Secināms, ka veselības iestādēm, izpildot pienākumu rūpēties par sabiedrības veselības pakalpojumiem, jāietver arī sociālie un finansiālie pienākumi, lai nodrošinātu videi draudzīgu ārstniecības procesu, galvenokārt, attiecībā uz slimnīcu atkritumu apsaimniekošanu. Nolaidīga atkritumu apsaimniekošana kalpo kā ievērojams vides piesārņojuma pamats (Dorion, Severo, Olea, Nodari & De Guimares, 2012). No apskatītā pētījuma gūtajiem rezultātiem izriet konkrēta cēloņsakarība, proti, izglītojot tās personas, kuras veic attiecīgās darbības, nodrošinot zaļo pāreju veselības aprūpes sektorā, tiek veicināta zaļās pārejas veiksmīga ieviešana. Bez visu iesaistīto personu kopējas darbības nav iespējams nodrošināt tādu slimnīcu darbību, kas uzskatāma par videi draudzīgāku. Pieņemtie normatīvie tiesību akti vai slimnīcu vadību pieņemtie regulējošie dokumenti nespēj nodrošināt zaļo pāreju veselības aprūpes nozarē bez šo dokumentu iestrādes slimnīcu vidē.

ASV medicīnas studiju un medicīnas personāla tālākizglītības procesā iestrādājusi sociālo misiju, t.i., mērķis ir ne tikai uzlabot pacientu veselību, bet arī veicināt godīgāku – taisnīgu, uzticamu un universāli pieejamu – veselības aprūpi. Sociālās misijas ietvaros tiek īpaši uzmanība vērsta uz ētisko aspektu iestrādi

medicīnas personāla izglītošanas procesā (Fitzhugh, 2017). No apskatītā zinātniskā raksta izriet, ka medicīnas personāla apmācību papildināšana ar mācībām par sociāli atbildīgai ārstniecībai nepieciešamajām prasmēm tiek aktualizēta kā nepieciešams faktors, lai slimnīcas spētu nodrošināt sociāli atbildīgu ārstniecību.

Par medicīnas studiju un vides pārmaiņu kursa savstarpējas sasaistes nozīmīgumu norādījuši arī ASV medicīnas studenti, proti, pētījuma ietvaros tika izvērtēti potenciālie veidi klimata pārmaiņu un veselības kursa (*Climate change and health (CHH)*) iestrādei medicīnas studiju procesā. Pētījumā tika nosaukti tādi pielietojamie mācību procesa rīki, kā semināri, diagnostika, komunikācijas prasmju kursi, pētījumi, klīniskā korelācija vai pieredze un prakses analīze un izvērtēta to iesaiste medicīnas procesu studijā, attiecinot šos rīkus tieši uz klimata pārmaiņām un ilgspējīgu veselības aprūpi (Sullivan et al., 2022) Apskatītā pētījuma rezultāti dod iespēju izstrādāt efektīvāku medicīnas studiju procesu, ka vērsts ne tikai uz pašu ārstniecības procesu, bet arī uz zaļu un sociāli atbildīgu veselības aprūpi.

Medicīnas personāla izglītošana ir akūti nepieciešama, nodrošinot tādu veselības aprūpi, kas atbilst ANO mērķiem. Vienlaikus, neizglītots medicīnas personāls var nopietni kaitēt arī apkārtējai videi, t.i., tieši medicīnas personāls ir tas, kuram nākas veikt dažādu atkritumu, piemēram, farmācijas, ķīmisko vielu un medicīnas iekārtu un instrumentu, šķirošanu vai iznīcināšanu. Šīm vielām, produktiem vai iepakojumiem nonākot apkārtējā vidē, tiek radīts kaitējums gan tīra ūdens un sanitārijas pieejamībai, gan sauszemes ekosistēmai.

Amerikas Savienoto Valstu (ASV) veselības aprūpes nozarē sociāli atbildīgu ārstniecības procesu ietekmē Louna Institūts (*Lown Institute*) un tā radītais Louna Indekss (*Lown Index*), ar kura palīdzību tiek noteikts Amerikas slimnīcu sociālās atbildības pakāpe. Bez tam tiek nodrošināts šī indeksa detalizēts apskats un salīdzinājums ar citām slimnīcām. Indeksa mērķis ir nodrošināt pacientam iespēju izvēlēties sociāli atbildīgāku un “zaļāku” slimnīcu. Tādējādi, slimnīcām savā starpā konkurējot un piesaistot pacientus, vienlaikus tiek uzlabota veselības aprūpes sniegšanas kvalitāte attiecībā uz sociāli atbildīgu zaļo pāreju.

Indeksā ir iekļauti 53 rādītāji, ar kuru palīdzību tiek nodrošināta unikāla un holistiska slimnīcas veiktspējas klasifikācija. Šie 53 rādītāji iedalīti 3 pīlāros – vienlīdzība, sniegtās veselības aprūpes vērtība un tās rezultāti (*Lown Institute Hospitals Index for Social Responsibility Methodology (LIHISRM)*, 2023).

Piešķirot slimnīcai indeksu, tiek izvērtēta: slimnīcu darbinieku un pacientu vienlīdzība, proti, iekļautība, algu starpība, kā arī sabiedrības ieguvums; sniegtās veselības aprūpes vērtība, proti, kā slimnīcas darbinieki izvairās no nevajadzīgas aprūpes un spēj sasniegt pozitīvus rezultātus bez pārmērīgām izmaksām; sniegtās veselības aprūpes rezultāti, proti, klīniskie rezultāti, pacientu apmierinātība un drošība (*LIHISRM*, 2023).

Īpašu lomu, veicot sociāli atbildīgu zaļo pāreju veselības aprūpes nozarē un cīnoties ar ārstniecības iestāžu ietekmi uz klimata pārmaiņām, ieņem veiktie pētījumi un tajos gūtās atziņas. Šajos pētījumos tiek aktualizēta veselības aprūpes nozares problemātika, attiecībā uz medicīnas personāla nepietiekamajām zināšanām un prasmēm sociāli atbildīgas zaļās pārejas aspektā.

Pētījuma ietvaros, veicot literatūras apskatu (2010.-2022.gadam) saistībā ar veselības aprūpes sniedzēju zināšanas un attieksmi pret vides ilgtspējību, konstatētas veselības aprūpes iestāžu darbinieku ierobežojumi un spējas piedalīties konkrētu praktisko darbību veikšanā, nodrošinot sociāli atbildīgu zaļo pāreju (McCauley et al., 2023).

### **Medicīnas personāla apmācību nodrošinājums Latvijā** *Provision of medical personnels training in Latvia*

Ar LR Ārstniecības likumu noteiktas ārstniecības personu pienākumi ārstniecībā, tai skaitā, ārstniecības personām nosakot par pienākumu regulāri pilnveidot profesionālo kvalifikāciju un izglīties palīdzības sniegšanā. Prasības attiecībā uz tālākizglītību, kā arī apgūtās tālākizglītības novērtēšanas un apstiprināšanas kārtību nosaka Ministru kabinets.

MK 2016.gada 8.novembra noteikumi Nr.718 nosaka ārstniecības un ārstniecības atbalsta personāla kvalifikācijas uzlabošanas īstenošanas kārtību. Šo noteikumu prioritārais virziens ir sociālā iekļaušana un nabadzības apkarošana (Ministru kabinets, 2016).

Pirmšķietami šie noteikumi paredz tāda veida apmācību nodrošināšanu, kas atbilst ANO mērķiem, tādējādi arī nodrošinot sociāli atbildīgu zaļo pāreju. Tomēr jāapskata Veselības ministrijas 2023.gada 27.jūnija rīkojums Nr.01-01.1/85 "Cilvēkresursu apmācības plāns".

Apmācības plānā noteiktas konkrētas izglītības programmas, kā arī to mērķauditorija. Plānā ietvertas tāda izglītības programmas, kā piemēram - medicīnas personāla zināšanu un prasmju izglītības programma, kas, sniedz rekomendācijas neatliekamās medicīnas palīdzības jomā, sirds un asinsvadu slimību jomā, u.c. Papildus tam plānā ir ietvertas profesionālās tālākizglītības programmas, kas sniedz iespēju mācīties papildus specialitātes iegūšanai, kā arī profesionālās pilnveides programmas (Cilvēkresursu apmācības plāns (CAP), 2023). Savukārt, izpētes ietvaros uzsvars tiek vērsts tieši uz ārstniecības un ārstniecības atbalsta personu vispārējām zināšanu un prasmju uzlabošanai paredzētajām neformālās izglītības programmām. Izvērtējot piedāvātās mācību programmas, secināms, ka piedāvātās neformālās izglītības programmas ietver daļēju ANO mērķu sasniegšanu, tādējādi radot daļēji sociāli atbildīgu un ilgtspējīgu veselības aprūpes sistēmu.

Mācību programmu ietvaros analizētas tādas veselības aprūpes nozares problēmas, kā korupcijas riski, personāla un pacienta savstarpējo komunikācijas



prasmju trūkums, nedrošs zaļu izgatavošanas un aprites process, pacientu, tostarp, bērnu, tiesību neievērošanu, u.c. problēmas (CAP, 2023).

Analizējot medicīnas personāla profesionālās kvalifikācijas pilnveides procesu un tā regulējošos normatīvos tiesību aktus, tika secināts, ka Latvijā netiek aktualizēta medicīnas personāla iesaiste cīņā ar klimata pārmaiņām un sociāli atbildīgā zaļā pāreja veselības aprūpes nozarē. Izvēles apmācības programmas aptver tikai daļēju zaļās pārejas nodrošināšanai nepieciešamo problēmu jautājumu analīzi.

Lai sekmētu ārstniecības personu iesaisti, nodrošinot sociāli atbildīgu zaļo pāreju veselības aprūpes nozarē, ir jāveic virkne gan praktisku, gan teorētisku apmācību pasākumu, tai skaitā, risinot radušās problēmas valsts, pašvaldības, kā arī nevalstisko organizāciju līmenī. Bez tam Latvijā nepieciešams atbalstīt tādu pētījumu izstrādi, kuros aktualizēta konkrēta problēma un piedāvāti tās konkrēti risinājumi. Likumdevējam, pieņemot likumus un izpildvarai, pieņemot MK noteikumus, jāņem vērā šādu pētījumu rezultāti nevalstisko organizāciju līmenī, piemēram, Latvijas Ārstu biedrības, ekspertu atzinumi, īpašu uzmanību pievēršot izglītības sistēmai un tālākāpmācības mehānismam attiecībā uz medicīnas personāla iesaisti sociāli atbildīgas zaļās pārejas nodrošināšanā Veselības aprūpes nozarē.

Izvērtējot medicīnas personāla apmācību nodrošinājumu Latvijā, nepieciešams ņemt vērā arī dažādu sabiedrības organizāciju vai nevalstisko organizāciju veiktās sabiedriskās aktivitātes, jo arī šādas organizācijas palīdz sasniegt sabiedrības mērķus, piemēram, dzīvot ekoloģiski tīrā vidē vai saņemt sociāli atbildīgu veselības aprūpi, utt. Lai gan šīs organizācijas nav daļa no valsts struktūras, tomēr to ietekme ir nenoliedzami vērā ņemama.

Attiecībā uz vides izglītību, uzmanību jāvērs uz Vides izglītības fondu, kura kodolā ir piecas uz vides izglītību vērstas programmas. Viena no šādām programmām ir “Zaļās Atslēgas” programma, kas aptver 150 dažādus kritērijus, tos iedalot 13 grupās. Programmas ietvaros sešu veidu komercdarbību veicēji – viesnīcas un hosteļi; kempingi un brīvdienu parki; mazās tūrisma mītnes; muzeji, tematiskie parki un centri; konferenču centri; restorāni un kafejnīcas – ir tiesīgi iesniegt pieteikuma anketu un obligāto kritēriju pielikumus. Programmas vadlīnijās noteikti gan obligāti ieviešamie kritēriji, kuriem jābūt jau ieviesti uz pieteikšanās brīdi, gan vadlīniju kritēriji, kuri ieviešami pakāpeniski, atkarībā no darbības ilguma programmā (Vides izglītības fonds, B.d.).

Programmas kritēriju mērķi balstīti uz ANO 17 Ilgtspējas attīstības mērķiem, proti, nodrošināt korporatīvās sociālās atbildības pamatprincipu ievērošanu uzņēmumā; izmantot videi draudzīgus, ekosertificētus tīrīšanas un mazgāšanas līdzekļus uzkopšanas darbos, nodrošināt atbilstošu un videi draudzīgu atkritumu apsaimniekošanas sistēmu, u.c. (Foundation for Environmental Education, N.d.) Lai gan programma attiecas tikai uz konkrētiem komersantiem, tomēr jāsecina, ka minētie kritēriju mērķi ir attiecināmi arī uz ārstniecības iestāžu darbību,

nodrošinot sociāli atbildīgu zaļo pāreju. Latvijas valsts iestādēm neapšaubāmi jāveicina šādu kritēriju ieviešanu arī veselības aprūpes nozarē. Zaļās atslēgas sertifikāts komercdarbības jomā piesaista jaunus klientus, veicina uzņēmuma atpazīstamību un dod iespēju uzņēmuma darbiniekiem piedalīties apmācībās par sociāli atbildīga un “zaļa” uzņēmuma darbība nodrošinājumu. Attiecinot Zaļās atslēgas sertifikātu uz līdzvērtīgu sertifikātu, kas būtu izsniegts ārstniecības iestādei, konstatējams, ka ārstniecības iestādēm, pirmkārt, rastos konkurence par pacientu piesaisti, tādējādi radot situāciju, kad ārstniecības iestādes ir ieinteresētas nodrošināt sociāli atbildīgu un “zaļu” veselības aprūpes sniegšanu un, otrkārt, tiktu nodrošinātas papildus apmācības, sertifikātu saņēmumušajām ārstniecības iestādēm, tādējādi papildus izglītojot medicīnas personālu attiecībā uz sociāli atbildīgu zaļo pāreju.

Tāpat jāizvērtē arī Eiropas Komisijas izstrādātās “zaļā” izglītības programmas ietekme uz medicīnas personāla apmācību nodrošināšanu Latvijā. Tā ir Eiropas Savienības atbalstīta, uz zaļo pārkārtošanos un ilgtspējas kompetenču uzlabošanu visos izglītības līmeņos vērsta izglītības un apmācības nozare (European Commission, N.d.).

Ar Eiropas Savienības Padomes 2022.gada 16.jūnija ieteikumu par mācīšanos zaļās pārkārtošanās un ilgtspējīgas attīstības sekmēšanai Nr.C243/1 7.punktu izteikts Padomes ieteikums turpināt atbalstīt formālas un neformālas izglītības un mācību iestādes, lai tās attiecīgā gadījumā faktiski integrētu zaļo pārkārtošanu un ilgtspējīgu attīstību visos savos pasākumos un darbībās. 7.punkta “e” apakšpunktā norādīta arī nepieciešamība izmantot resursus un materiālus, ko izstrādājušas nevalstiskās organizācijas un citas attiecīgās struktūras, kuras darbojas vides un izglītības jomā (Padomes ieteikums par mācīšanos zaļās pārkārtošanās un ilgtspējīga attīstības sekmēšanai, 2022). Padomes ieteikumā saskatāmas konkrētas norādes par nepieciešamību mācību procesā vai apmācībās integrēt “zaļo” domāšanu un ilgtspējīgas attīstības prasības. Tas panākams, veicot konkrētu priekšmetu ieviešanu mācību iestādēs, kuras ir valsts akreditētas, kā arī ietverot mācību procesā dažādu organizāciju vai citu struktūru veidotās apmācības un mācību materiālus.

### **Secinājumi** **Conclusions**

1. Latvijā netiek aktualizēta problemātika, kas saistīta ar sociāli atbildīgu zaļo pāreju veselības aprūpes nozarē.
2. Nodrošināt sociāli atbildīgu zaļo pāreju veselības aprūpes nozarē iespējams tikai ar medicīnas personāla iesaisti. Slimnīcu vadība nav spējīga pašrocīgi nodrošināt sociāli atbildīgu, “zaļu”, pilnvērtīgu un ilgtspējīgu veselības aprūpi.

3. Nepieciešams apzināt medicīnas personāla zināšanas un prasmes attiecībā uz sociāli atbildīgas zaļās pārejas nodrošināšanu veselības aprūpes procesā.
4. Latvijā nepieciešams izstrādāt konkrētu normatīvo tiesību aktu bāzi gan valstiskā, gan pašvaldību līmenī saistībā ar zaļo pāreju veselības aprūpes nozarē, proti, jāpilnveido gan esošie likumi, gan jāizstrādā specifiski MK noteikumi un pašvaldību saistošie noteikumi, kuri nosaka apgūstamās tālākizglītības programmas, kuras vērstas tieši uz medicīnas personāla izglītošanu sociāli atbildīgas un “zaļās” veselības aprūpes sniegšanā.
5. Ministru kabinetam jāizstrādā atbilstošas vadlīnijas, bet Veselības ministrijai jāizstrādā tālākizglītības programmu saturs, kas veicina izglītotu un kompetentu medicīnas personāla komplektēšanu “zaļās” veselības aprūpes jomā.
6. Latvijā jāņem vērā ārvalstu labā prakse attiecībā uz slimnīcu novērtēšanu, atbilstoši to sociālajam atbildīgumam un “zaļajai” domāšanai. Jāievieš Latvijas sociāli atbildīgu un “zaļu” slimnīcu indekss, kurā apskatīta gan slimnīcu vadību rīcība, gan ārstniecības personu sniegtā veselības aprūpe, ķīmikāliju un zāļu šķirošana un attieksme pret pacientiem.
7. Jāizvērtē ieviestā indeksa sekas, proti, jāizstrādā konkrētas sekas, ja slimnīca saņēmusi zemu indeksa vērtējumu.
8. Latvijā, izstrādājot izglītības sistēmu, kurā tiek sagatavots arī sociāli atbildīgs un “zaļi” domājošs medicīnas personāls, nepieciešams ņemt vērā Eiropas Savienības Padomes ieteikumus un izmantot resursus un materiālus, ko izstrādājušas nevalstiskās organizācijas un citas attiecīgās struktūras, kuras darbojas vides un izglītības jomā.
9. Zaļās atslēgas sertifikātam līdzvērtīga sertifikāta iestrāde veselības aprūpes nozarē uzlabotu ne tikai attīstītu sociāli atbildīgu zaļā kursa iestrādi veselības aprūpes nozarē, bet arī pavērtu iespējas nodrošināt papildus apmācības medicīnas personālam, tajās ietverot organizāciju un citu struktūru izstrādātās apmācības un mācību materiālus.

## **Summary**

The issue of healthcare institutions' impact on climate change in the last decade has become urgent. Several studies show that healthcare institutions are among the biggest producers of CO<sub>2</sub> emissions. “Green” and socially responsible healthcare system should be developed in accordance with the European Green Deal and UN Sustainable Development Goals.

On the one hand several studies have examined the impact of hospitals on the environment, even the concept “Green Hospital” has been introduced, however, to ensure socially responsible green transition in the healthcare sector it is necessary to train medical personnel, as the medical personnel is the key to a

successful socially responsible green transition. Therefore, guidelines regarding medical personnels' training must be developed.

It is important to define terms “socially responsible” and “green transition” as it would help to understand the main idea of the research. Authors present their proposal to define the “socially responsible green transition” as “actions that not only take care of the social order of the patients, preventing social inequality, but also ensure the contribution to climate neutrality”. Moreover, it is always related to the European Green Deal and UN Sustainable Development Goals.

To develop a socially responsible green transition into Latvia's healthcare sector, positive foreign practices should be taken into account. Namely, guidelines that define specific medical personnels' training should be developed, as has been done by the NHS Foundation Trust in The Newcastle upon Tyne hospitals. Furthermore, it is necessary to identify the scope of knowledge and skills of the medical personnel regarding the provision of a socially responsible green transition in the healthcare process, as well as it is necessary to introduce a “green hospital” index, which reflects the actual actions taken by the hospitals in Latvia to ensure a socially responsible green transition in the healthcare sector. Additionally, public and non-governmental organizations must be included in the process of training medical personnel.

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# UNLOCKING THE ESSENCE OF LONELINESS IN THE OLDER ADULTS: AN EXPLORATION THROUGH PARTICIPATORY RESEARCH

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**Abstract.** *In Lithuania's aging culture, aspects of older individuals' "loneliness" and social isolation are becoming increasingly relevant. Despite this, older adults frequently refuse to acknowledge these life's intricacies. Numerous studies indicate that older individuals link social isolation and loneliness to a life of failure and personal worthlessness. As a result, rather than finding solutions, people frequently choose to isolate themselves even more and refrain from discussing these issues with friends or family. The loneliness experienced by older people should be acknowledged, and steps to increase social inclusion will not only extend but also greatly enhance their quality of life.*

*Participatory research was employed to conduct the study. It is a systematic study in direct cooperation with persons for whom the research question is relevant, with the aim of acting or changing something. Participatory research favours collaborative research, where researchers and interested groups actively collaborate with sharing information and expertise. The study was conducted in a care institution providing social services. Every participant in the participatory research gave their consent to participate in the study, and they were informed about its goals, methods, and use of data. They were also given the choice to leave the study at any time if they felt it was inappropriate.*

*The study revealed that loneliness is discerned through the emotions and behaviours of older adults; an individual's loneliness is reflected in both mental and physical health. Emotions like indifference, rage, despair, boredom, needing attention, longing, and the want to speak are signs that someone is lonely. Older people sometimes openly express loneliness but loneliness can also be associated with depression. Concerning employee motivation for change, it was observed that employees displayed a keen interest in training, comprehending its necessity and benefits. Simultaneously, it was noted that some employees may exhibit passivity and a lack of motivation to embrace change and accept innovations. Therefore, the myth that older workers are less likely to change and innovate as well as to increase their knowledge and abilities has been partially validated by participatory studies.*

**Keywords:** *loneliness, older adults, participatory research.*

## **Introduction**

Lithuania's population is aging, as are most EU nations. There were 552.4 thousand senior persons (those 65 and above) in the population at the start of 2021, making up 19.8% of all residents. Every fourth lady and every seventh man were 65 years of age or older. Compared with the start of 2018, there were 0.6 thousand, or 0.1%, more older individuals. The age dependency ratio in 2019 was 30, it is gradually increasing over the years, in 2010 it was 26 (Official statistics portal, 2021; Statistical yearbook of Lithuania, 2021). The issues of older adults' social isolation and loneliness are growing more and more important in Lithuania's aging society. Although older individuals often hesitate to acknowledge these life difficulties. Numerous studies demonstrate that older adults link social isolation and loneliness to a failing life and a lack of personal worth. As a result, rather than finding solutions, people frequently choose to isolate themselves even more and refrain from discussing these issues with friends or family (Summary Report, 2021).

Loneliness is the perception of social isolation or the subjective feeling of being lonely (National Academy, 2020). This subjectivity of feeling means that people with a lot of social contacts may feel lonelier than those who are socially isolated, or that not everyone who experiences solitude feels lonely. Therefore, loneliness is more about a state of mind. Older adults are at increased risk of experiencing feelings of loneliness due to the changes in their social life (loss of friends, spouse or relatives) as well as health issues (chronic illness, weakening sight and hearing etc.) (Valtorta & Hanratty, 2012; Cacioppo & Cacioppo, 2014; Landeiro et al., 2016; Zemaitaityte et al., 2023). However, loneliness can also have a detrimental impact on older people's physical and emotional well-being. As noted by Tiwari (2013), loneliness may be a pathognomic factor for depression in later life.

According to older people's researchers (Ward et al., 2014), there is still a lack of effective methodologies to reveal the diversity and diversity of social exclusion in different cultural and legal contexts. Our capacity to determine risk factors and repercussions, gauge the frequency of social exclusion among older persons, and comprehend historical shifts in exclusion is hampered by the absence of such instruments. It also has a direct impact on society's capacity to confront the issue and create sensible laws and response strategies (Summary Report, 2021). The authors, who looked at older adults' risk of social isolation, offer their observations based on the study's findings. According to British researchers (Scharf and Bartlam, 2008; Ward et al., 2014), the difficulties of conceptualizing and operationalizing the phenomenon due to its complex nature in the case of

older people are exacerbated by different life experiences and different life deprivations.

Recognising loneliness in older adults is a challenging as well as an important task for social care professionals and caregivers. As we found out earlier, measurements of loneliness can be complicated by the complexity of the phenomenon, that is although loneliness is a common human feeling, every individual can experience it differently in life. It means that loneliness can be caused by different factors that may go hand-in-hand for some individuals but may not lead to feelings of loneliness for others. As a result, social care professionals and caregivers may not recognize the signs of loneliness due to a lack of training or awareness (Velloze et al., 2022). They need not only training on how to recognize signs of loneliness but also validated measurement tools. Different measuring instruments can be used by social workers and caregivers to identify social isolation and loneliness in older adults. Unfortunately, most tools like the ALONE Scale, the Lubben Social Network Scale and the Multidimensional Scale of Perceived Social Support, are limited in their concentration on evaluating different aspects of social connectedness and perceived support (National Academies, 2020; Manera, Smith, Owen, et al., 2022; Deol, Yamashita, Elliott, et al., 2022). There is also the de Jong Gierveld Loneliness Scale which consists of an 11-item questionnaire designed to assess both overall loneliness as well as social and emotional loneliness (National Academies, 2020). The Revised UCLA (R-UCLA) Loneliness Scale, however, is a commonly used standard tool that is intended to gauge an individual's subjective sense of social isolation and loneliness (National Academies, 2020). The scale is a 20-item questionnaire designed to measure older persons' perceived loneliness. Older adults together with service providers and housing associations were involved in the development of the UCLA scale (National Academies, 2020). When solving the complex problem of loneliness among older people, the measuring instruments must be validated in the national context, professionals and caregivers must be trained to recognize the signs of loneliness, and together with the clients, discuss their well-being and feelings as much as possible (Czaja et al., 2021).

The purpose of the article is to present a recognition of the loneliness screening tool from a personnel perspective. The research aims to evaluate the effectiveness and suitability of the loneliness screening tool for older persons. Staff who care for older people were asked to express their opinion and rate the loneliness screening tool, including its relevance, comprehensibility and practicality in identifying loneliness among older people.



## **Methodology**

The study employed a participatory research methodology. Participatory research in the social sciences, such as education and social work, is becoming more and more acknowledged as a means of achieving results that address the needs and preferences of the participants whose lives and activities are the subject of the study. Participatory research is an empirical research method where stakeholders, including academic researchers, clients, initiators, implementers, and users, participate in the research as participants. Participation is a defining principle throughout the research process. Knowledge is co-constructed with the individuals whose lives are the subject of the study (i.e., the interest group) in what is perceived as a relational process. It seeks to bring about specific adjustments or acts (What is participatory research?). The process of conducting research involves ongoing learning and reflection. According to Vaughn and Jacquez (2020), research is an ongoing process that involves learning, reflection, and action. Maximizing the participation of these individuals (referred to as "participants") by their needs and capacities is one of the key tenets of participatory research. When taking part in participatory research, participants are frequently called "co-researchers". Participatory research involves participants not as subjects but as active research participants (Brown, 2022). Ethical principles are important in all research, but in participatory research (where the distinction between academic researchers and participants is the least defined) it requires even more attention (Vaughn & Jacquez, 2020). The following ethical principles were considered in this participatory research project: mutual respect; personal integrity, which is characterized by each research participant acting in an honest, trustworthy, and transparent manner; striving for equal democratic input from all participants in all aspects of the project; active learning, which occurs when all participants view the research process as a mutual learning experience, sharing experiences, reflecting, and evaluating; collaborative, collective action, wherein participants (academic researchers and other relevant stakeholders) work together to achieve positive change (What is participatory research?). Participatory research is widely used in many countries, but this method is rarely implemented in Lithuania. One of the first articles on this kind of research was published in 2015, which discussed the opinion of researchers about the value of the method and challenges in conducting research in organizations (Jarašiūnaitė et al., 2015). Also, participatory research was conducted in four organizations (Varžinskienė et al., 2015) that provided short-term and long-term services to older adults, looking for possible changes in the organizations for better service delivery. For the presented research, this methodology was chosen to reveal more deeply the analyzed phenomenon, in particular the possibilities of applying technological tools to recognize the loneliness of older adults.

Eight social workers and nurses participated in a focus group discussion during the study's initial phase. The study revealed that social workers and nurses try to recognize the loneliness of older adults, including the relatives of the clients. When naming how they recognize loneliness, the research participants indicated that they recognized loneliness from emotions, the behavior of older persons, and the state of health (mental and physical). Emotions like difference, rage, despair, boredom, needing attention, longing, and the want to speak are signs that someone is lonely. Older people occasionally admit to being lonely. Sometimes loneliness can be associated with depression. However, the research participants noted that they do not have the means, and especially the technological tools, for this. Therefore, in their opinion, it would be important to have such a tool that would facilitate their work. At the same time, care workers and social workers identified the difficulties in providing services to overcome loneliness, such as a heavy workload, increased control by authorities, suspension of activities, and a lack of help, when asked how they identify the loneliness of older people, what kind of help they receive, and who they turn to.

The loneliness recognition criteria identified during the focus group discussion were included in the development of a digital loneliness recognition tool. The tool developed during the project was presented to the employees of a social care institution, as well as training was conducted.

*Table 1 The Characteristics of the Respondents (the authors)*

<b>Age</b>	<b>Gender</b>	<b>Duration of work in a social care institution</b>
30 – 50 years - 29	Women - 39	1 – 2 years - 20
> 51 years - 10	Men - 2	3 – 5 years - 5
Did not answer about his/her age - 2		> 5 years - 16

The digital tool for assessing the loneliness of older adults was developed during the project “*Digi-Ageing – Overcoming Loneliness*“ (No 2020-1-AT01-KA202-078084/PCR-28) and aimed to help health care professionals and social workers assess the risk of loneliness symptoms in older adults by offering a 3-stage assessment procedure. This assessment procedure includes a rapid singleness check; UCLA Loneliness Rating Scale; and Ecomap. After the three-stage screening, the specialist gets recommendations for prevention (prevention report) and intervention (intervention report). Based on this, the specialist can draw up an action plan together with the client. After the training, social workers and nurses tested the tool in their activities. 41 employees of the social care institution participated in the training and used the digital loneliness assessment tool.

In the further phase of participatory research, quantitative research in the form of a questionnaire survey was chosen. Table 1 lists the characteristics of the responders.

### Research data analysis

When asked to rate the digital loneliness assessment tool (Fig.1), the respondents distinguished the overall assessment of the tool as very good and good (37 respondents). This tool helps to identify loneliness in clients, is effective (36) and suitable (34) for use by social workers and nurses of all ages.

According to the study, it's critical to take into account a variety of aspects while providing training and introducing new initiatives to staff members, including age, motivation for change, and specific circumstances like pandemics. Employee enthusiasm for training and their comprehension of its benefits should be taken into consideration when assessing employee involvement and desire for change. However, employees may also be passive and reluctant to adopt innovations. The survey data partially supported the stereotype that older workers are less inclined to innovate and adapt to technology, and they are also less likely to increase their knowledge and proficiency with digital tools.

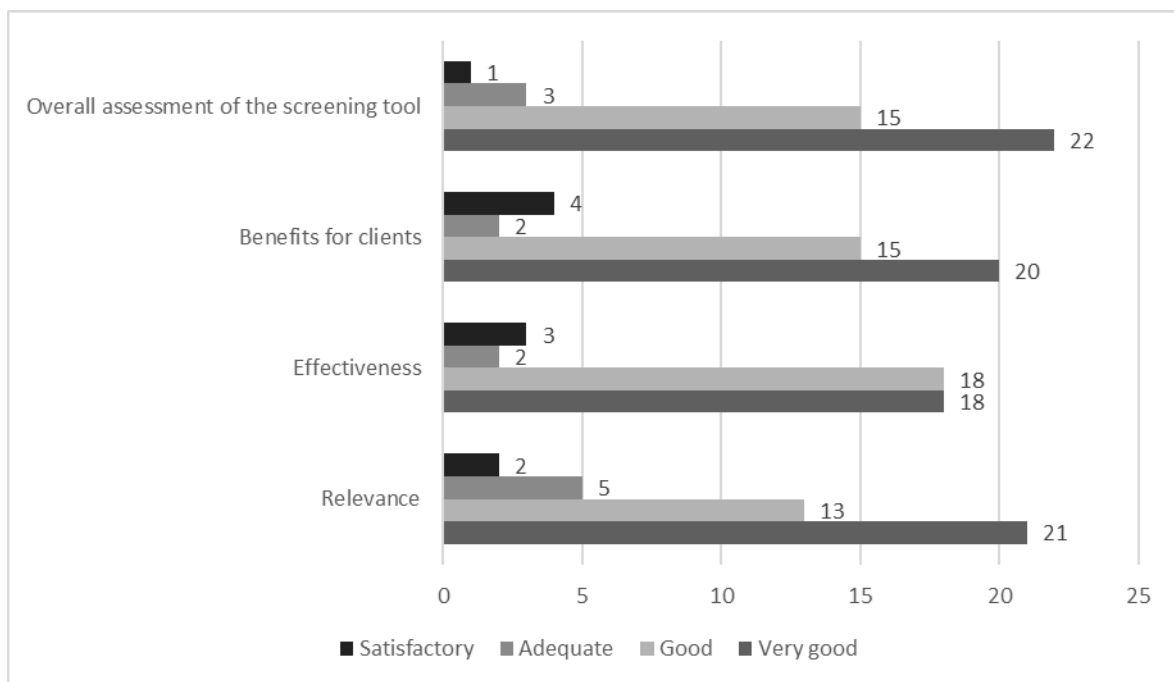


Figure 1 Assessment of the Screening Tool (the authors)

In response to the usability of the Loneliness Screening Tool, research participants indicated that they found it easy to use the digital tool (39). 37 respondents noted that this older people's loneliness assessment tool was easy to

integrate into their daily work and this digital tool was useful for their clients (Fig.2).

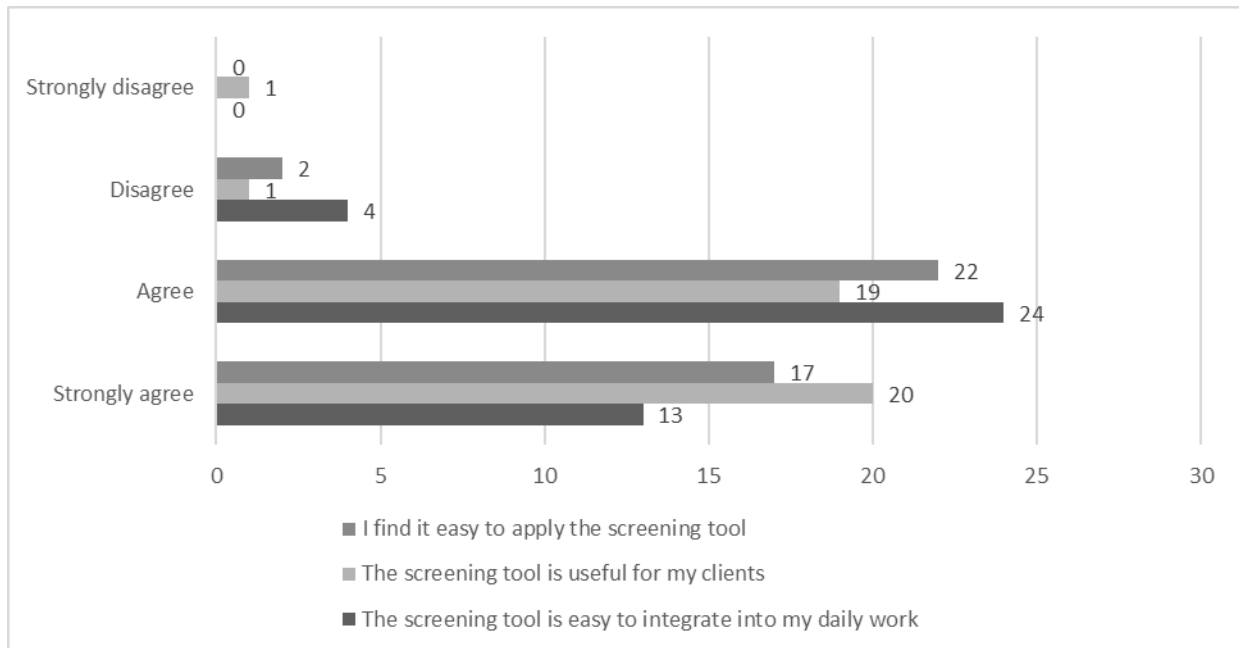


Figure 2 Adaptability of the Screening Tool (the authors)

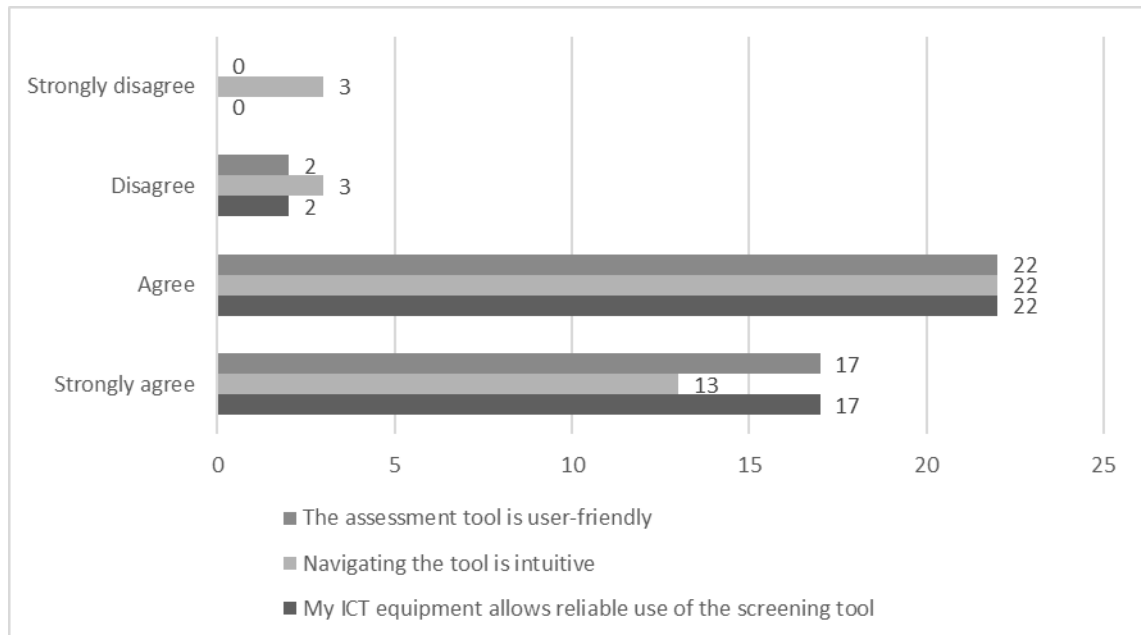


Figure 3 Technical aspects of the Screening Tool (the authors)

The research participants added that when using the digital loneliness assessment tool, clients willingly answered the questions presented, expanding the answer options provided by memories.

When asked to evaluate the technical aspects of the digital loneliness screening tool, the study participants again distinguished that the tool was easy to use (39) and that the information and communication technology equipment available to the staff allowed reliable use of the digital loneliness assessment tool for older adults (Fig.3).

During the oral group discussion, it was added that the reliability was related to the Personal Data Protection requirement, when using the new assessment tool, the confidentiality of the older adult's data was fully ensured.

## Conclusion

In conclusion, the initial phase of the study, conducted through participatory research with social workers and nurses, illuminated the challenges they face in recognizing loneliness among older adults. The identified criteria were instrumental in the development of a digital loneliness recognition tool, presented and tested in a social care institution. The subsequent quantitative research, involving a questionnaire survey with 41 participants, demonstrated a positive reception of the tool. Research participants found the tool effective, suitable for all age groups, and easy to integrate into their daily work. The study emphasized how crucial it is to take into account variables like employee age, change motivation, and external circumstances like the pandemic while implementing new tools. It also supported the myth to some extent that older workers are less likely to use digital tools. The positive feedback on usability and technical aspects, coupled with the emphasis on data protection, underscores the potential value of the digital loneliness assessment tool in enhancing the well-being of older adults while ensuring the confidentiality of their personal data.

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## Managing the Pandemic in Care Homes – Older People's Perspective

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**Abstract.** *The ageing population and the challenges it poses are becoming more and more pressing, both in Lithuania and in other European countries. This requires constant attention from researchers and institutions providing social services and education activities. A new challenge is the Covid - 19 pandemic, which has resulted in nursing homes banning visits to residents and restricting educational activities in order to protect the elderly. Residents were not allowed to see relatives and friends. The pandemic and the quarantine imposed in Lithuania caused stress and anxiety for the residents and the negative social consequences are still being felt even after the pandemic. Nine semi-structured interviews were carried out to reveal the attitudes of older people towards the management of the pandemic in care institutions and the peculiarities of communication in care homes during the quarantine. The research revealed that during quarantine, lonely older people were sensitive to a lack of opportunities for social communication, and felt a lack of closeness among people. As a result of the quarantine regime lonely older people felt unfulfilled, lost the ability to realize themselves through certain activities.*

**Keywords:** *aging, care homes, communication, Covid-19, education activities.*

### Introduction

Scientific Aging is one of the issues of the 21st century. Lithuania, like many European countries, is facing an ageing population trend, population ages are increasing and birth rates are falling. Old age is characterized as a social risk by reduced income, social isolation, deteriorating health, morbidity, disability (Newall & Menec, 2019). Although old age is often described on the negative side: an ageing body, diseases in the old age period, inferior cognitive abilities, dependence on relatives, social isolation, solitude, loneliness (Courtin & Knapp, 2017; Singh & Misra, 2009), yet, scientists see a positive side of the old age by claiming that old age can be an opportunity to find new friends, discover new interests (Apostolou et al., 2020).

China born COVID-19 infectious disease first located in the town of Wuhan spread rapidly across many countries and developed into a worldwide pandemic, causing an emergency state in the health system and a global health crisis

(Straigyte & Briliute, 2020). The Government of the Republic of Lithuania rapidly responded to the scale of the virus spread and the threats posed by the virus to human health and life. Regarding COVID – 19 spread, the Government of the Republic of Lithuania, by Resolution No 207 of 14 March 2020 (LR vyriausybes nutarimas Nr. 207, 2020), declared quarantine throughout the territory of the Republic of Lithuania as of 16 March. The Government of the Republic of Lithuania, introducing a pandemic caused quarantine has taken strict protective measures: special conditions, restrictions and procedures of work, life, rest, movement, economic and other activities of persons have been established. The governmental measures in Lithuania against the spread of coronavirus for protection of public health and life during the pandemic particularly affected older people, as the Resolution of the Government of the Republic of Lithuania on the proclamation of quarantine in the territory of the Republic of Lithuania (LR vyriausybes nutarimas Nr. 207, 2020), prohibited attendance of all stationary social service institutions, family residences, homes of group and community life. In order to shield older people from COVID – 19 infections in care homes, visiting residents was banned, residents' leaves and transfers of items and foodstuffs to residents were suspended. Residents of the care home could not see their relatives, friends, and could not step outside their institutions. The pandemic and the break of the quarantine in Lithuania have caused stress and anxiety to residents, while negative social consequences are felt even after the expiry of the pandemic. The aim of the article is to reveal the attitude of older people towards managing the pandemic in care institutions and the peculiarities of communication in care homes in the quarantine period.

### **Research methods**

A qualitative study method, a semi-structured interview was used to conduct the research. The participants in the research were 9 single older people aged 67 to 78 who lived in a care facility. Interviews with older people were conducted directly (face-to-face), recording respondents' answers on an audio recorder. Subsequently the interviews were transcribed – the entries were recorded in a text document using symbols (Kuckartz, 2019). There was also a translation of three interviews into Lithuanian, as these interviews were carried out in another language. Data from interviewees have been deindividualized to ensure the anonymity of the participants in the research. In the process of the study the ethical measures of the procedure were kept, i.e.: participants in the interview were informed of the purpose of the study and gave their verbal consent to participate in the research; during the interview, the principles of anonymity and confidentiality were adhered to, no questions that could infringe a person's dignity or cause other psychological harm were asked, as well as the permission from the administration of the institution to conduct a research was granted. In this article



we will discuss the following topics highlighted in the analysis of research data: quarantine caused difficulties and peculiarities of communication in care homes during quarantine.

The participants in the research signed an informed consent form, by which they confirmed their voluntary participation in the study, and the researchers were obliged to ensure the confidentiality of personal data.

### **The analysis of the research data**

The quarantine has become a challenge for the residents of care homes, while social issues linked to quarantine create circumstances that are harmful or undesirable. Older people living alone in care facilities have become even more vulnerable during quarantine, and have faced isolation because of the changes in the regulations of the visits and interaction with incoming people, resulting in the limitation of the right of the residents to see friends, acquaintances, relatives, so this age group experienced a lack of opportunities for social communication. All movement was restricted within care facilities, education activities and incoming visits suspended, and leaves outside the institution's territory were canceled. Participants' responses show dissatisfaction with the quarantine regime and frustration. The analysis of the research data revealed the following subtopics.

*Restricting movement in care homes.* Study participants revealed that they were most affected by the restrictions of human contacts in care homes during quarantine. The inability to leave their room restricts possibilities, rights and freedoms, and affects self-esteem. A person feels unwanted, depowered, rejected, isolated, even more lonely, experiencing a sense of being locked behind the walls: “... they wouldn't let it out of the room here, would try not to let us in anywhere.” (D3). The restriction of movement caused to stop community meetings, which meant that social workers could not augment the sense of community, and the residents did not feel belonging to the community: ‘In general, it used to be someone's birthday and the whole community would come together, and now it's over.’ (D8). Long stays in bed restrict physical activity, have adverse effects on health, build up dependency: “... well you just lie down <... > You won't stay in bed all day. At night it's another matter, well, but during the day you have to move.”; “... not enough movement...” (D7). The prohibition of going to a clinic or to a shop located in the same building emphasizes the restriction of freedoms been more, a person does not feel a part of society: “... after all, all of us have this and no entrances, walk around there, there's a clinic on the other side, you cannot go in there, there is a buffet, nothing, you cannot get in .” (D1).

*Passing time outside within the territory of the institution.* Being outside is understood to have a positive effect on health. During quarantine, residents of care homes had the opportunity to go outside within the territory of the institution, but they could have stayed outside for a limited period of time keeping distances, so

such a passing of time is one of the quarantine discomforts: “*We get out <... > within the fenced territory and that 's all... (D2); “Please, step out here but nowhere else.” (D3)*. The possibility of sitting on a bench outside is perceived as an opportunity to communicate, to break away from negative feelings and loneliness: “*And here, for quarantine, you can only sit on a bench.”; “... I used to go outside, we have benches. Well, with a man in a wheelchair, we would go out together...” (D5)*.

*Resident visitation suspense.* According to the study participants, relatives, friends, and acquaintances were not allowed to visit during quarantine. The care home was subject to strict hygiene requirements, so attendance was banned. This quarantine measure that does not promote social contact and depowers a lonely elderly person: “*... now no one is allowed in”; ‘...they wouldn't let in <... > relatives, they wouldn't let anyone in. Well, checked when someone came, well: employees, all that (D1)*. As a result of the attendance suspension, the study participants lost the opportunity to communicate live with other significant individuals who helped and visitors who came to see other residents; this led to a narrowing of the social circle: “*The saleswoman used to come, now it's not possible...’; “No one came in at the time of the quarantine.” (D8); “No strangers are allowed in here.” (D9)*. The administration's strict quarantine measures give a sense of anxiety and distrust: “*It's very strict here”; “... we have a very strict approach to it.”; “... does not allow anything.” (D4)*. Residence visits suspension is associated with closure, which restricts communication, destroys social ties: “*... now, shut down for such time”; “... so no one is let in...” (D7)*.

*Forbidden leaves.* Participants said they could not go out to the city or to the store. Such restriction does not strengthen a person's self-confidence, narrows possibilities of leisure activities and independence: “*... I can't go shopping, nor pick anything in the store myself...’; “... I can't go out to town.” (D1); “... you can't get out behind the fence.” Beyond the fence around the city for a ride.” (D2)*. Because of prohibited leaves, lonely older people are unable to realize themselves through certain activities: “*... you can't even go to the store...” (D3); “... but for quarantine you won't go any further, you can't.”; “... you're not going anywhere.” (D5)*. Such a restriction reduces physical activity and capacity: “*And this is good for nothing, I can't move, it is not allowed to go outside.” (D7)*.

*Social communication problem.* The inability to communicate live with friends, acquaintances, and relatives is a major problem of psychological severity. Lonely older people cannot fulfill themselves among their friends, relatives, cannot meet their social needs, they feel longing, loneliness: “*... we can't meet friends.” (D2); “Well, you can't even see each other. This is very bad.” (D4)*. The quarantine has led to discontinued social ties, indicating even greater psychological difficulties, frustration, anger, anxiety: “*... I didn't call, I don't think you can come here.”; ‘... you can't meet anyone, you can't in any way, it's not good.’ (D7)*.

*Limited communication.* Some participants in the study revealed a shortage of communication during quarantine. This problem is due to a weakening of social contacts and the possibility to communicate only with roommates: “Well, that friend and I talk, that's all.” (D6); “Well, well, that's in the hallway, and it's not possible for a long time, to gather in a larger group.” ... *There's not even anyone to talk to <... > And now it's such a time, it doesn't let anyone in...* (D8). A lack of communication leads to self-exclusion: “My communication, uh, radio.” (D9). *Scarcity of education activities.* Social workers were unable to organize education activities involvement due to strict quarantine requirements, so lonely older people felt bored, emptiness, and struggled to survive this period: “What can one do here, nothing, the quarantine has come...”; “... I can't do anything, damn.”; “Nothing is done, there are no activities now ...” (D7). Lack of activities has had a negative impact on communication, psychological well-being: “Well, our teacher didn't come.” *'It's been tough for a while, because it's just coming every Tuesday, well every week. Well, it was more and more fun, some kind of entertainment and being in the company.*” (D8).

### **Communication peculiarities in the care homes during quarantine**

The stories of the interviewees revealed the importance of communicating, maintaining social ties and the desire to connect with relatives, friends or acquaintances. As the study participants state, there is never too much of communication, and communication is particularly important for lonely older people, because not only does it help to exchange valuable information, but it also satisfies the basic needs of the individual, to be given a sense of need, usefulness and ability to express oneself. Communicating to lonely older people is similar to a pleasant pastime. Another person's concern at a particularly difficult period such as a pandemic is also meaningful.

*A need to communicate.* The desire to communicate is inseparable from a human being and it helps to avoid the feeling of loneliness, so lonely older people need communication on a regular basis “... just that I want to communicate.” (D1); “Communication, no, no, it's never too much.” (D2).

*Communication possibilities.* It is very important for lonely older people to be contacted, but the restrictions imposed by quarantine have made communication in care homes difficult. Residents of care homes have been deprived of the opportunity of live contacts with relatives, friends, acquaintances, so live communication in care homes was possible only among residents: “We communicate among ourselves with whom we wish to.” (D2); “... you can go to somebody's ward here and you can talk to them.” (D7). Residents are encouraged to communicate with each other: “They obviously wish us to communicate with each other...” (D3). Care homes help reduce the burden of negative feelings and

increase positive feelings, break away from loneliness. “... well just like home is home, and this is different, other communication.” (D5); “Of course it is better to communicate with a person.” (D6). Residents in care homes feel physically surrounded by other people and needed. The attention shown by employees strengthens confidence, improves well-being, creates a confidence-building environment: “You know, you can talk to someone, too, while at home no cat, no dog, no neighbor, but neighbors have their own life. And here come girls, and others, and social workers, doctors, nurses, ask of how you feel, how are you doing, how is your mood, always...” (D8).

*Help of friends, residents.* Contacts between friends or residents of care homes grow stronger through communication. People become friends when they interact more often, so lonely older people often call other people in care homes with whom they interact and receive help friends: “... comes just occasionally, sits for a while, helps.” (D3) ; “I was usually accompanied outside by this <... >, sometimes this one accompanied me outside” (D9). Nurturing old ties: “... my social aid brings familiar books from the ambulance...” (D1); During quarantine, the assistance and communication provided by a care home resident became perhaps the most significant in the course of a difficult quarantine period, as regular contact creates a safe environment: “... he would come to pick up the dishes, carry them away, and even at one point he told me, my the nurse was told by the doctor, that he even fetched me medicine and went to take it for me, he is very good” (D4).

*Social ties.* The spread of the network of older people is influenced by loss, change of residence, but it is also important how the individual is able to communicate and make contact. The study participants revealed that when they changed their place of residence, they found friends, and that they were interested in creating new contacts with others and maintaining old contacts, but that quarantine restrictions had a negative impact on fostering social ties: “... there are acquaintances, friends...” Well, I have one friend <... >.” (D2); “... these are both friends and acquaintances, here are all kinds.”; “<... > I have all, all my relatives, and all the friends they are <... > living out there.” (D7). Maintaining relationships with relatives stimulates a sense of need: “I have a niece who cares about me, cares deeply, a very, very good person...” (D4). Having no relatives increases loneliness and emotional emptiness: “My relatives are all in the cemetery...” (D9).

*Maintaining social contacts through phone conversations.* Maintaining social relations depends on restrictions imposed by quarantine, so as the only option and preferred way of communicating with relatives and friends during quarantine are phone calls: “So I call, so one talks”; “... I make calls, I make phone calls, everything” (D1); “I've got this on the phone...”; “... I call and talk.” (D3). There is also a lack of communication from relatives or friends, which is a negative factor. Participants rarely get calls, and they themselves don't always

have the opportunity to make calls: “... somehow I always try to get her to call me, to find out how it is, with everyone ...” (D8).

The research has revealed that quarantine restrictions have a negative impact on the lives of lonely older people, their emotional well-being, and social engagement. The results of the research suggest that lonely elderly people find it difficult to adapt to worrying situations, i.e. pandemic-induced quarantine. Scientists (Courtin & Knapp, 2017; Lekamwasam & Lekamwasam, 2020) have highlighted that the measures taken to contain infection during a pandemic have a significant negative impact on the mental health of older people, as social constraints resulting from social restrictions and isolation limit daily activities and create difficulties in adapting to new social barriers. This research also highlighted that during the pandemic, lonely older people felt even more lonely, they faced communication problems, a lack of educational activities, and felt a lack of closeness, isolation, and worthlessness. A lonely person feels isolated, worthless, uninterested, saddened by the inability to communicate because of their situation, in which one appears involuntarily, the absence of the possibility to maintain meaningful interpersonal relations reduces personal self-esteem (Courtin & Knapp, 2017; Holmes, et al, 2020). The research shows that the main consequence of COVID-19 is increased social isolation and loneliness. The research also revealed that lonely older people experienced negative emotions as a result of the adverse circumstances of the coronavirus: fear, anxiety, frustration, stress, fear of contracting the disease themselves and infecting others.

### **Conclusion**

In summing up the obtained data it is possible to conclude that care homes have complied with strict quarantine requirements during quarantine to protect the care homes inhabitants from COVID – 19 infection. Special restrictions, the diminished physical and social contacts, absence of educational activities, the loss of the normal rhythm of life, reduced opportunities, rights and freedoms, deepened frustration, boredom and a sense of isolation from the rest of the world. During quarantine, lonely older people were sensitive to a lack of opportunities for social communication, and felt a lack of closeness among people. As a result of the quarantine regime lonely older people felt unfulfilled, lost the ability to realize themselves through certain activities, and there was a severe lack of pastime engagements in care homes. Such occurrences bothered lonely older people, and had a negative impact on their quality of life. Lonely older people living in care homes have needs of stable communication, and relationships with others hold as very important. Communication and social contacts are among the most important needs. A person living in a care home desires to be wanted, heard, have the support, understanding and help of a close person, i.e. of a relative, a friend or an acquaintance.

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**MĀKSLA UN DIZAINS, DIZAINA  
IZGLĪTĪBA**

*Art and Design, Design Education*

# VĒSTURISKĀS TRAUMAS PĀRNESES UN PĀRVARĒŠANAS PIEREDZE ĪSPROZĀ: JANAS EGLES UN DACES VĪGANTES PIEMĒRS

## *The Experience of Transferring and Overcoming Historical Trauma in Short Stories: an Example of Jana Egle and Dace Vīgante*

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**Abstract.** *The article aims to evaluate and characterise the reflection of the transference of historical trauma and the perspective of overcoming it in the short stories of contemporary Latvian women. The article deals with examples of the short stories of Latvian writers Jana Egle and Dace Vīgante, highlighting the impact of historical and psychological conditions and the traumatic consequences of the heroes' fates. The theoretical and methodological basis of the article is the theoretical studies on postcolonial criticism, cultural memory and trauma, and intergenerational communication issues by Aleida Assman, Dominick LaCapra, Laurie Vickroy, Polly Jones, Gabriele Schwab, Gayatri Chakravorty Spivak, and others. The selected examples of Egle's and Vīgante's stories reflect the inclusion of individual stories in the collective trauma narrative. The chronotope of the historical memory in Egle's and Vīgante's prose forms a hard-to-exit labyrinth where the deep subconscious traumas resonate with insuperable conflicts after the Second World War and the unavoidable coincidences of circumstances. The characters have fallen not only into the historical and sociopolitical traps but also into the traps of personal traumas. Both writers highlight the limits of historical memory marked by the intersection of individual and collective memory.*

**Keywords:** *Egle, history, memory, short prose, trauma, Vīgante.*

### **Ievads**

#### **Introduction**

Rakstā pieteiktais temats iezīmē 21.gs. sākuma latviešu literatūrā joprojām neatslābstošo interesi par 20. gs. sāpīgo vēsturi, kas saistīta ar Otrā pasaules kara un pēckara padomju perioda notikumu un to seku pārvērtējumu. Mūsdienu aktuālo notikumu, proti, Krievijas kara pret Ukrainu, kontekstā tas ieguvījis jaunu nozīmību. Raksta mērķis ir izvērtēt un raksturot vēsturiskās traumas pārneses atspoguļojumu un tās pārvarēšanas perspektīvas pieteikumu mūsdienu latviešu sieviešu īsprozā. Kā aktuālie piemēri izvēlēti Janas Egles (1963) stāsti no krājumiem "Gaismā" (2015) un „Svešie jeb *miļenkij ti moj*” (2018) un Daces Vīgantes (1970) stāsti no krājumiem „Ledus apelsīns” (2016) un “Tad redzēs!” (2018), kas aktualizē mazo vēstījumu ieplūšanas kolektīvajā traumā naratīvā



nozīmi, saslēdzot to ne tikai ar bijušās postpadomju, bet visas Eiropas kolektīvās atmiņas telpu.

Tēmas aprobācijai izvēlētie J.Egles un D.Vīgantes īsprozas teksti analizējami kā traumas naratīvi un var palīdzēt traumas izpratnē un, iespējams, arī dziedināšanā. Abu rakstnieču īsproza turpina stiprināt kopš 20./21.gs. mijas renesansi piedzīvojušā īsā stāsta žanra dzīvotspēju un tā tālāku attīstību. Rakstnieces gandrīz vienlaikus debitē ar saviem pirmajiem stāstu krājumiem, kas ir spēcīgs pieteikums un arī pārsteigums gan profesionāļiem, gan plašākai lasošajai auditorijai. J.Egles – profesionālas pedagoģes, bērnu dārza vadītājas, iepriekš pazīstamas vairāk kā dzejnieces lokāli šaurā Liepājas un Lejaskurzemes reģiona kultūrtelpā – debijas stāstu krājums „Gaismā” (2015) saņem Latvijas Literatūras gada balvu (Laligaba) par labāko prozas grāmatu 2016. gadā. Kopš debijas prozā iznākušas vēl trīs stāstu grāmatas – „Svešie jeb *miļņkij ti moj*” (2018), “Dzimšanas diena” (2020) un “Latvju pacients” (2023). Savukārt D.Vīgantes – profesionālas mākslas zinātnieces, arī juristes un personālvadības speciālistes – debijas stāstu krājums „Ledus apelsīns” (2016) nominēts Laligabas balvai par spilgtāko debiju 2017. gadā. Debijas krājuma titulstāsts “Ledus okeāns” 2024. gadā publicēts atsevišķā izdevumā. 2018. gadā iznācis otrais īsprozas krājums „Tad redzēs!”.

Raksta teorētiski metodoloģisko pamatu veido postkoloniālisma teorētiķu un atmiņu pētnieku teorētiskās atziņas par atmiņas un traumu konceptiem. Pētījumā izmantoti kultūras teorētiķes Aleides Asmanes (*Aleida Assmann*) pētījumi par atmiņas kā pagātnes atdzīvināšanas un vēstures kritiskas pārskatīšanas instrumentu paaudžu komunikācijas atjaunošanā. Rakstā izmantotie vēsturiskās traumas naratīva pētnieku Dominika Lakapras (*Dominick LaCapra*), Lorijas Vikrojas (*Laurie Vickroy*) un Pollijas Džonsas (*Polly Jones*) pētījumi konceptualizē izvēlēta pētnieciskā fokusa aktualitāti un piedāvā metodoloģisku virzienu intensīvi traumatisku notikumu ietekmes uz indivīda emocionālo un kognitīvo funkciju darbību, to radīto traucējumu diagnostikas un novēršanas iespēju analīzi. Savukārt vēsturiskās traumas kā starppaudžu komunikācijas problēmjautājuma izpētes teorētiskā argumentācija gūta Gabrieleles Švābes (*Gabriele Schwab*) un Gajatri Čakravorti-Spivakas (*Gayatri Chakravorty Spivak*) pētījumos par upura un pāridarītāja ambivalentās saiknes un postkoloniālās sievietes dubultās apspiestības problēmjautājumiem.

Kā norāda virkne traumas pētnieku – D. Lakapra, G. Švābe u.c. – abu pušu iesaistīto – gan upuru, gan pāridarītāju – transpaaudžu traumas pārnese joprojām ir viens no aktuālajiem, bet neizrunātajiem jautājumiem mūsdienu starpdisciplinārajā, tostarp literatūras un kultūras, pētniecības laukā (LaCapra, 2016; Schwab, 2010). Vēsturiskās traumas analizētajos J. Egles un D. Vīgantes stāstos izgaismojas individuālās un kolektīvās atmiņas krustpunktos, atklājot traumatiskās pieredzes slazdus, kas ietver traumas pārmantojamību vairākās paaudzēs. Abu rakstnieču īsprozā tiek ieskicēts arī iespējamais traumas

pārvarēšanas psiholoģiskais mehānisms. A. Asmane norāda, ka atcerēšanās ir viena no būtiskākajām traumas pārvarēšanas un dziedināšanas iespējām, kas mazina spriedzi starp vēsturi un atmiņu: „Kolīdz atsakās no seklās dihotomijas starp vēsturi un atmiņu, kļūst redzamas daudzveidīgās sasaistes starp abām formām, kā apieties ar pagātni, kā arī to savstarpēja papildināšanās. Jo mums ir vajadzīga atmiņa, lai vēsturisko zināšanu masā iedvestu dzīvību, perspektīvas un nozīmību, un mums ir vajadzīga vēsture, lai kritiski pārbaudītu atmiņas konstrukcijas, kuras vienmēr rodas noteiktās varas konstelācijās un kuras diktē tagadnes vajadzības.” (Asmane, 2018: 21)

### **J.Egles un D.Vīgantes īsprozas varoņu traumatiskās un postraumatiskās pieredzes raksturojums**

#### ***Characterisation of the traumatic and post-traumatic experiences of characters in Egle's and Vīgante's short stories***

J. Egles un D. Vīgantes īsproza psiholoģiski precīzi stāsta par cilvēkiem, kuru dzīves veidojis un traumējis 20. gadsimts – Otrais pasaules karš, deportācijas, pēckara padomju režīma traumatiskie nospiedumi – fiziska un psiholoģiska vardarbība, ideoloģisku melu, puspatiesību un noklusējumu laiks bijušajā sociālisma nometnē, Padomju Latvijā. Padomju ideoloģijas noteiktā dzīves pieredze abu rakstnieču stāstos tiek konfrontēta ar totalitārā režīma sabrukuma un Latvijas brīvvalsts atjaunošanas eiforijas atplūdiem 20.gs. 90. gados, atklājot postpadomju perioda ekonomiskās un psiholoģiskās krīzes piemēlto cilvēku ieslīgšanu vēl dziļākos pagātnes pieredzes traumatisma slazdos. Par minētajiem konfliktiem signalizē starppaudžu, īpaši izceļot sievietes, attiecību problēmas, tādējādi apstiprinot A. Asmanes tēzi, ka „traumas sagrauj cilvēka atmiņu un izrauj caurumus paaudžu komunikācijā. Jo masīvāka atvairīšana un lielāki caurumi atmiņā, jo lielāka tad vajadzība šos caurumus aizpildīt.” (Asmane, 2018: 35)

Atsaucoties uz amerikāņu traumas naratīva pētnieces L. Vikrojas traumas definīciju, proti, ka trauma ir „indivīda reakcija uz notikumiem, kas ir tik intensīvi, ka pasliktina indivīda emocionālo un kognitīvo funkciju darbību un var novest pie paliekošiem traucējumiem” (Vickroy, 2015: 6), jāsecina, ka gan J. Egles, gan D. Vīgantes prozā izgaismotie varoņu likteņi, viņu rīcība un dzīvesveids uzskatāmi demonstrē traumas sekas – tie bieži vien ir noslēgušies sevī, savā klusuma zonā, zināmā izdzīvošanas režīmā. Visi viņu spēki tiek tērēti paš aizsardzībai, tie vairs īsti nespēj just līdzi, piedot vai palūkoties uz kādām situācijām ar humoru un vieglumu. Zināmā mērā viņu dzīvēs ir iedarbināts pašiznīcināšanās režīms. Bieži, būdami vardarbības upuri, viņi paši kļūst par varmākām, turpina nodarīt ļaunumu gan sev, gan apkārtējiem. Tādējādi traumēto paaudžu komunikācija ir apgrūtināta vai dažkārt pat neiespējama.

Vēsturiskās atmiņas laiktelpa abu rakstnieču prozā veidojas kā grūti izejams labirints, kur katra atsevišķā varoņa dziļi zemapziņā iedzītās traumas pārklājas, sakļaujas, atklājoties nepārvaramām laikmeta kolīzijām pusgadsimta garumā, nenovēršamu apstākļu sakritībām, citu radīto un pašu kultivēto stereotipu cilpām. Traumatiskā pieredze – sašķelta, noliegta, dziļi slēpta, noklusēta, dažkārt racionalizēta, bet kopumā neintegrēta – tiek nodota pēcnācējiem ar starppaaudžu pārneses palīdzību (Schwab, 2010). Rezultātā mūsdienu cilvēka psihē šis neapzinātais mantojums mēdz ieņemt lielu vietu un turpināt savu destruktīvo darbību. Atšķirīga ir abu rakstnieču atspoguļoto traumu lokācija, intensitāte un to reprezentējošie paņēmieni.

Abu rakstnieču stāstos iezīmēti to vēstures notikumu provocētie kontrapunkti un sarežģījumi, kuros varoņi nokļuvuši gan pret pašu gribu (1940. un 1949.g. deportāciju pieredze), gan šķietami labprātīgi, izdarot kādas kļūdainas individuālas izvēles. Spilgts izsūtījuma traumatisma piemērs ir J. Egles stāsts „Veronika” (krāj. „Svešie jeb *miļenkij ti moj*”), kurā no pirmās padomju okupācijas laikā (ap 1940., 41.g.) dzimušās mazās Veronikas skatupunkta fiksēts vācu okupācijas laiks (1941–1945), aizvešanas draudi uz Vāciju un labprātīgas trimdas iespējas, pēckara padomju varas realizētās kolektivizācijas politikas absurds Latvijas laukos un 1949. gada izsūtījuma notikumu traumatiskā rezonanse mazās meitenes zemapziņā. Kolektīvā izsūtījuma pārdzīvojums ieplūst neizsūtīto, kuru vidū beigu beigās ir arī Veronikas ģimene, individuālajā pieredzē, identificējot kultūras traumu, kas skar daudz dziļākus psihes slāņus. Veronikas prieku par iespēju palikt dzimtenē un atgriezties mājās vecajā dzīvē aizēno redzētais skats, kā aizved viņas draudzeni Rasmiņu ar mammu. Draudzenes ģimenes deportācija atbalso un identificē daudzu aizvesto likteņus. Meitenes atmiņas klusumu veido un nostiprina neizsāpēti pārdzīvojumi, vainas apziņa un neatbildēti jautājumi visa mūža garumā, postraumatismu raksturojošs sēru un melanholijas stāvoklis.

Mākslinieciskās kapacitātes ziņā līdzvērtīgs izsūtījuma traumas destruktīvās darbības reprezentējošs piemērs ir D. Vīgantes stāsts „Ledus okeāns” (krāj. „Ledus apelsīns”). Autore izstāsta vienas dzimtas traģisko izsūtījuma pieredzi, proti, 1941.gadā tiek deportēta ģimenes māte Irma un tēvs Edvards, viņu bērnus – dažus gadus veco dēliņu Kasparu un zīdaiņa vecuma meitiņu Māru – no izsūtījuma paglābj Irmas tēvs. Pēc vectēva nāves abiem ir iespēja dzīvot vectēva brāļa Oskara ģimenē, kas abus pasargā no bērnunama postošās pieredzes. Stāstā spilgti izgaismota psiholoģisko un kultūras aspektu mijiedarbe varoņu attieksmē pret minētajiem notikumiem. Vīgante detalizēti izstrādā un atklāj traumas sekas indivīdu psiholoģijas līmenī, rādot, cik spēcīgi varoņu apziņu deformē jaunā vēsturiskā un kultūras situācija, kas sabalsojas ar totalitārisma pētnieces L. Vikrojas atziņu, ka nav pareizi uzskatīt, ka visi cilvēki darbojas saskaņā ar universāliem, dabas dotiem psiholoģijas likumiem, tieši pretēji, mūsu emocijas ir kultūras (un ideoloģiju) konstruētas, un tādas pilnīgi noteikti ir arī literatūrā

attēlotās emocijas (Vickroy, 2015: 14). Kad 1956.gadā Irma pēc 15 gadiem atgriežas no izsūtījuma, viņa saviem bērniem ir svešiniece. Meita nevar mātei piedot viņas neesamību, proti, savus piecpadsmit bārenības gadus. D. Vīgantes Māra, līdzīgi kā J. Egles Veronika, ir tipisks “traumatizētās vecāku paaudzes” (LaCapra, 2016: 379) bērns. Abas ir saņēmušas vardarbīgu vēsturi ne tikai caur faktiskajām vecāku atmiņām vai stāstiem (*postmemory*), bet arī afektiem, kas ir neintegrēti un nepielīdzināmi.

D. Vīgante stāstā precīzi iezīmē arī pirmās pēckara desmitgades, Staļina kulta laika traumatiskos nospiedumus. Irmas meita Māra ir pieņēmusi jaunus ideoloģiskos, sabiedriskās un kultūras dzīves diktētos noteikumus, rezonējot tipisko padomju mitoloģisko domāšanas veidu, proti, ģimeni, māti un tēvu aizstāj darba kolektīvs, kur jaunā sieviete pavada lielāko savas dzīves laiku un uzturas vislabprātāk, kur tiek svinēti svētki un stiprināta pārliecība par dzīves pseidomērķiem un centieniem. Šie mērķi nav saistīti ar izglītības iegūšanu un garīgu pilnveidi, bet gan šauri materiālistisku un vienkāršu izdzīvošanas stratēģiju. Šāds pasaules uztveres un uzskatu modelis ir absolūts pretstats mātes pirmskara Latvijas brīvvalsts laika izglītības un kultūras pieredzei, interešu lokam, mērķiem un centieniem. Kā atzīst padomju totalitārisma pētniece P. Džonsa, arī tad, ja totalitārisma laiks bijis vairāk valdošās politiskās partijas diktēts, nekā pilsoņu sirdīs izjūsts, tas atstājis dziļu un noturīgu iespaidu uz padomju cilvēka pasaules uztveri, kultūru un mākslu (Jones, 2013: 18). D. Vīgantes stāstā pārciestās zaudējuma sāpes neļauj mātei un meitai saprasties un izlīdzināties līdz pat mātes nāvei, kaut autore psiholoģiski smalki atklāj abu sieviešu netiešos, lasītājam tikai nojaušamos tuvināšanās mēģinājumus. Kādā intervijā autore atzīst, ka „bija svarīgi neieslīgt nostalgijā, neļaut atmiņām kļūt pārlietu patētiskām. Es pievērsos tā laika kontrastiem un absurdiem, tam, kā cilvēki jutās, cik atšķirīgi tika audzinātas dažādas paaudzes un kā veidojās neizpratne un vēsums starp dažādas kultūrtelpas baudījušiem cilvēkiem.” (Vīgante, 2016b) Mātes un meitas pārrautās attiecību saites mēģina atjaunot Irmas mazmeita un Māras meita Rasa. Tādējādi var runāt par traumas pārnesi un klātbūtni triju paaudžu sieviešu likteņos. Taču tās apzināšana un izstāstīšana ir galvenais atbildības kritērijs un iespējamais solis uz tās pārvarēšanu un dziedināšanu. Dzimtas vairāku paaudžu sieviešu vainas un kauna traumatiskā klusuma dubultais zīmogs ir pārraujams ar traumas izcēlumu no aizmirstības zonas un tās pēctraumatiskās ietekmes bloķēšanu.

Savukārt J. Egles pirmā krājuma „Gaismā” (līdzīgi kā D. Vīgantes otrajā stāstu krājumā „Tad redzēs!”) visus astoņus stāstus tematiski vieno atšķirīgas traumatiskās pieredzes. Autore šķietami nefokusē uzmanību ne uz vēsturi, ne uz politiku, taču pagātnes traumatisms destruktīvi caurvij personāžu likteņus. Taču, pieaugot stāsta psiholoģiskajai spriedzei varoņu traģisko dzīves stāstu kolīziju izgaismojumā, sākotnēji tikai nojaušamais vēsturiskais un sociālais fons pamazām iegūst arvien precīzākas un skaidrākas kontūras – kā fatālu apstākļu un

nepārvaramu šķēršļu noteikts izejas punkts varoņu traumētajām dzīvēm. J. Egles stāstu centrā konstanti ir izirušas vai nepilnas ģimenes modelis, kurā vīrietis visbiežāk attēlots kā destruktīvs spēks, kas fatāli ietekmē sievietes dzīvi, ko raksturo toksiskas attiecības ģimenē, alkoholisms, fiziska un psiholoģiska vardarbība u.c., piemēram, stāstos „Tāds rudens” un „Laiks mosties” tas ieskicēts pat vienas ģimenes četrus paaudžu likteņos. Krājums izceļ gaismā vairākās paaudzēs noklusētās traumas transgresiju: vardarbību ģimenē, izvarošanu, psihiskas problēmas, pedofiliju, seksuālu diskrimināciju u.c. Pagātnes rēgi varoņu tagadni veido tādu, kāda tā ir, var teikt, ka notikušais determinējis notiekošo. Tādēļ varoņu lielākā vēlme izrauties no atsvešinātības slazdiem – sarunāties un būt uzklausītiem, saprastiem – visbiežāk tā arī paliek vēlmju iedīgli. Nepiepildītu un nepiepildāmu cerību izmisuma sāpes paceļ dažāda veida atkarības līdz hipertrofētām slimībām jeb deviāciju līmenim. Atkarība, kā zināms vienmēr izraisa līdzatkarību tuvākajos. Gandrīz katrā no krājuma stāstiem galveno varoni balsta un cenšas glābt kāds no līdzcilvēkiem, pašiem tuvākajiem – tēvs savu vardarbīgo dēlu Uldi stāstā „Gaisma”; vecāmāte vientulības un pamestības izmisumā apmaldījušos mazdēlu stāstā „Bedre”; māte tēva seksuāli izmantoto meitu stāstā „Judīte”; Agate savas nenodefinētās dzimumidentitātes slazdos nokļuvušo kaimiņu stāstā „Aiziet jūriņā”; vecākais brālis Juris nejauši izraisītās vecāku nāves vaininieku jaunāko brāli Klāvu stāstā „Lūdzu, lūdzu, lūdzu”; divi mazi bērni savas dzīves dubļos iegrimušo māti stāstā „Durvis”. Vēstījums ir arī par viņu līdzatkarību un bezspēcības slazdiem. Destrukcijas cēloņi ir dažādi. Tie var būt veidojušies ģimenē un pārmantoti („Bedre”; „Judīte”), un tie var būt nelaimīgas sakritības rezultāts („Lūdzu, lūdzu, lūdzu”), kas iegūst bumeranga efektam raksturīgo liktenīgo cēloņseku rezultātu. Tas visos gadījumos ir viens – nespēja sevi pārvarēt un mainīt apstākļus. J. Egles stāstu varoņi, pagātnes traumēti, bieži vien ir nomaldījušies savos priekšstatos un ilūzijās par pašu svarīgāko, sapinušies kādu nepārvaramu dzīves problēmu un atkarību pinekļos, vardarbīgi cenšoties izraut kādu mīlestības un laimes drusku uz līdzcilvēku rēķina. Šķiet, autores secinājums ir nepārprotams – mīlestības trūkums ir pati lielākā dvēseles trauma, kas izraisa tik daudz bēdu un nelaimju. Tas ir agresijas un karu cēlonis. Konkrēti un globāli.

Arī otrās J. Egles prozas grāmatas „Svešie jeb *miļēņkij ti moj*” visu 8 stāstu atšķirīgie, suverēnā dramaturģijā balstītie subjektīvie skatupunkti ne tikai fokusēti vienotas vēstījuma struktūras izveidē, ļaujot krustoties varoņu dzīves ceļiem un aktuālo problēmu lokam, pārdzīvojumu intensitātei un eksistenciāli skaudrajiem dzīves jēgas saprašanas mēģinājumiem, bet nepārprotami signalizē par vēsturiski traumatiskā mantojuma ietekmi. Lai arī atšķirīgs ir krājuma stāstu varoņu vecums, dzimums, tautība, dzīves telpa (pilsēta un lauki), dzīves pieredze, to biogrāfijas un dzīves vadlīnijas ir līdzīgas, viņi visi ir vienlīdz nelaimīgi, distancēti, atsvešināti un vientuļi, viņi visi ir svešinieki, bet, pirmkārt, svešinieki paši sev.

J. Egle šajā prozas krājumā mākslinieciski savdabīgā veidā pieskaras Latvijai un tās iedzīvotājiem joprojām aktuālajai, ilgstoši milzušajai kultūras traumai, kuru radījuši virkne 20.gs. notikumi – Latvijas valstiskuma zaudēšana 1940.gadā, Otrais pasaules karš, dzīve starp divām okupācijām, totalitārisma ideoloģijas kultivētā morāle, ilgstošā vēsturisko pāridarījumu noklusēšana, pašu izvēlēta vai situācijas uzspiestā līdzdalība abu okupācijas varu noziegumos, kā arī to vērošana, neizsakot protestu un nosodījumu. Tie ir jautājumi, kas pēdējā laikā pastiprināti Latvijā tiek pētīti gan no sociālantropoloģiskā, gan kultūrvēsturiskā skatupunkta, un jo īpaši aktualizēti pēc Krievijas agresīvās ārpolitikas realizēšanas pret Ukrainu kopš 2014.gada un pilna laika iebrukuma tās teritorijā 2022. gadā. Atsevišķu pētījumu rezultāti rāda, ka latviešu pārdzīvotās sociālās sāpes un kolektīvās bailes, kuras sakņojas vēsturiskajā atmiņā, joprojām apgrūtina tādu attiecību izveidi starp Latvijā dzīvojošajām etniskajām grupām, kurās valdītu savstarpējā pašāvēība, cieņa un uzticēšanās. Kolektīvā atmiņa nodrošina kolektīvās identitātes apzināšanos. Taču J. Egle nedramatizē, bet arī netrivializē šo kolektīvās identitātes un kultūras traumas aspektu, to reducējot līdz latviešu un krievu nacionālajām pretrunām un dažkārt sarežģītajām attiecībām. Drīzāk rakstnieces skatījums atbalso G. Švābes genocīda traumu pētījumos analizētā upura/pāridarītāja attiecību modeļa perspektīvu, kas izvirza abu pušu atbildību konstruktīva dialoga izveidē, kas rada nepieciešamību tulkot un izlīdzināt atšķirīgās kultūras pieredzes un humanizēt vēsturiski veidoto “ienaidnieka tēlu” (Schwab, 2010: 150). Kā norāda teorētiķe, svarīgi pārraut “traumatisko klusumu” (*traumatic silence*) un veidot dialogu. (Schwab, 2010: 80) Tas ir variants, kā pārvarēt vēsturisko traumu un transpaaudžu komunikāciju padarīt iespējamu. Kā redzams J. Egles prozas tekstos, traumatisma iedīgļi var slēpties arī ārpus etnisko vai nacionālo kategoriju noteiktajām robežām, pašu tuvāko attiecībās, vai drīzāk šo attiecību pārrāvuma faktā, dažkārt vairāku paaudžu starpā. Tādējādi citkārt tuvais var iegūt tālā un svešā veidolu, citāda un svešais šķīst tuvs un saprotams. J. Egles varoņu dvēseļu psiholoģisko šķērsgrīzumu asās šķautnes emocionāli caurvij jau krājuma nosaukumā pieteiktais smeldzīgās krievu tautas dziesmas „*Milēnkij ti moj*” motīvs, kuras vārdus noslēdzošajā stāstā „Kerija” cenšas izprast Latvijā dzīvojošās krievu tautības sievietes Aļevtinas mazmeita Kerija: „Kerija atceras rindiņas, kuras atkārtojas, un klusiņām dungo līdz: – *Milaja moja, vžjal bi ja ķebja, tam v kraju daļokom čužaja mņe ņe nužna...* Kas ir *čužaja*, kāpēc viņš negrib ņemt meiteni līdz?” (Egle, 2018: 258) Dziesmas motīvs emocionāli un konceptuāli sajož vēstījumu, modelējot to dvēseles laiktelpu, kurā katrā atsevišķā stāsta varoņiem iespējams satikties, izlīdzināties, būt kopā, atcerēties un dziedēt dvēseles traumas. Tas ir vienīgais autores piedāvātais izlīdzinājuma un samierinājuma apsolījums.

Līdzīgu psiholoģisko mehānismu radītie „dvēseles slazdi”, kas raksturo pēckara paaudzes kā konkrētā “laikmeta atkarīgas konstrukcijas (*zeitgeist-dependent*)” (Reulecke, 2008: 120) dzīves izjūtu – nespēju sadzīvot, bet nespēju

arī atbrīvoties no psiholoģisko traumu sekām – iezīmē arī D. Vīgantes varoņu dzīves sarežģītos labirintus. Frāze „es gribu nomirt”, ar kuru sākas stāsts „Sastingums” (krāj. „Tad redzēs”), ir sakāpinātu emociju spontāns rezumējums, kas signalizē par D. Vīgantes varoņu eksistenciālo sajūtu par savu dzīvi. Šos vārdus saka cilvēks, kurš, kā skaidro autore, „nevārgst slimības gultā, bezcerībā nezvārojas uz tilta malas virs bezdibeņa, bet gan treniņtērpā rosās pie plīts un gatavojas cept savu iecienīto vēršaci” (Vīgante, 2018: 41). Ikdienības rutīnas klātā virskārta konfrontē nepārejoši gruzdošus dvēseles zemslāņus, kas joprojām barojas no pagātnes notikumiem.

Vairumā stāstu atmiņu un atcerēšanās motīvs ir konceptuāli svarīgs, jo personīgā pieredze un pagātnes refleksijas ir būtisks apstāklis konkrētā notikuma kontekstā. Zīmīgs ir D. Vīgantes stāsts „Oda putekļiem” (krājums „Tad redzēs”), kurā vēsturiskās pieredzes izgaismojumā svarīga loma ir subjektīvajām atmiņām. Tām ienākot ikdienas rituālos, tiek uzturētas paaudžu saiknes un vienlaikus veidots stāsta kompozicionālais rāmis. Stāsta galvenā varone ir zudušā laika intensīvā meklējumu procesā, jo jūtas „laika nodota”, apzinoties, ka kaut kas būtisks dažādu iemeslu – gan objektīvi, gan subjektīvi noteiktu (bērnu, aizņemtības, varbūt sevis dēļ) – dzīvē palaists garām. Izgaismojas neskaidras atmiņas un netieši apjaušami pagātnes rēgi, pieredzējumu kontūras par konkrēto padomju dzīves laiku, kurā „mira un pazuda cilvēki. Cilvēki ar pagātni, ar bērniņas traumām.” (Vīgante, 2018: 98)

Taču vienlaikus zaudētā un zudušā laika meklējumi ir tā dzīves telpa, kurā apjaust lūgšanu spēku un gaidīt vai nesagaidīt atbildes uz „miljons jautājumiem saistībā ar dīvaino Dievu” (Vīgante, 2018: 109), par kuru vairs nav iespējams nedomāt. Triju paaudžu sievietes dzīves ceļi krustojas un mijiedarbojas dvēseles laiktelpā titulistā „Tad redzēs” (krāj. „Tad redzēs”). Stāsts veido idejiskas un mākslinieciskas paralēles ar iepriekš J. Egles prozas piemēros fiksētajiem attiecību sarežģījumiem un to pārvarēšanas mēģinājumiem. Stāstā tēlotās mazās meitenes, kuras dzīve notiek mātes un vecmāmiņas pārrauto attiecību radīto sarežģījumu ēnā (līdzīgi kā stāstā “Ledus apelsīns”), atmiņas par laiku kopā ar vecmāmiņu uznirst reizē ar zīmīgu pēdējā laikā bieži sapņotu sapni: „Vakarnakt atkal attapos sapnī. Es kaila stāvu lielā emaljētā bļodā, kurā vecmāmiņa parasti mazgā veļu. Viņa ar iedauzītu bleķa krūzi lej man uz galvas tikko slauktu pienu. Bļodā pie manis iekāpj vēl viena maza meitene, tā ir mana mamma. Bāli strautiņi likumo mūsu matos un nolīst no pleciem. Abas ķiķinām un tincinām vecmāmiņu, lai pastāsta, nu kā tad tur ir, skaistajos dārzos, pie piena upēm. Vecmāmiņa smaidīdama slauka mūs plānā linu dvielī un čukst: “Tad redzēs!”” (Vīgante, 2018: 111) Šajā visa krājuma koda frāzē ieslēpts nepateiktais, kā atzīst pati autore, „dzīli intīms klusuma brīdis, ieelpa, izelpa, pirms viss turpinās, tikai jau citādi” (Vīgante, 2016b), uz ko attiecināms postkoloniālisma pētnieces G. Čakravorti-Spivakas secinātais, ka „attiecības starp sievieti un klusumu var noteikt pašas sievietes; rasu un šķiru attiecības iekļaujas šajā kontekstā” (Čakravorti-Spivaka,

2014: 39). Un tas notiek jau citā pieredzes līmenī, taču jāērēķinās, ka dziedināšanas process ir lēns, to nav iespējams sasteigt un steidzināt. Tumsa kā stāstā materializējusies mākslinieciska substance ir tā bezapziņas zona, kurā pamazām apzināties savas dvēseles dzīves laiku, par kuru pirms daudziem gadsimtiem runājis Svētais Augustīns: „[...] atmiņā ir viss, kas ir dvēselē.[...] nav ne nākotnes, ne pagātnes, drīzāk pareizi būtu teikt, ka ir trīs laiki – pagātnes tagadne, tagadnes tagadne un nākotnes tagadne. Un tieši šie trīs laiki kaut kādā veidā atrodas cilvēka dvēselē [...]. Pagātnes tagadne ir atmiņa, tagadnes tagadne ir vērojums, nākotnes pagātnes ir gaidīšana.” (Augustīns, 2008: 419)

### **Secinājums** **Conclusion**

Noslēgumā jāsecina, ka gan J. Egle, gan D. Vīgante analizētajos īsprozas piemēros vēsturisko procesu traumatiskos nospiedumus galvenokārt fiksē stāstu varoņu psiholoģiskajā izpētes zonā. Teksti ieskicē pieteikto traumu traģisko raksturu un destruktīvos cēloņus, kas ir gan vēsturisku, gan personisku psiholoģisku apstākļu noteikti, vienlaikus aktualizējot iespējamo traumas pārvarēšanas un dziedināšanas perspektīvu. Abu rakstnieču stāstos aktualizētais atcerēšanās fenomēns kā būtisks atmiņas koncepta segments izgaismo dažādu paaudžu, īpaši sieviešu, atšķirīgās traumatiskās pieredzes, to pārmantojamību. Tādējādi iespējams runāt par zināmu prozas varoņu likteņu nolemtību, kas ir vēsturiskās atmiņas joprojām neatrisināto jautājumu apzīmogota. Mākslinieciski stāstos minētais aspekts atklājas kā „dvēseles atmiņu” slazdi, kuros varoņi sapinušies, iestrēguši, no kuriem mēģina izrauties, vai arī ar kuriem fatālā nolemtībā samierinās. Atmiņas fenomēns spilgtu nospiedumu veidā telpā atsedz laika dimensiju un izgaismo gan individuālās, gan kolektīvās atmiņas vairākus līmeņus – vēstures, kultūras, autobiogrāfisko, femīno u.c., rodot iespēju mazināt spriedzi starp vēsturi un atmiņu, normalizēt starppaudžu un etnisko kopienu komunikāciju mūsdienu vēsturiskajā un sociālpolitiskajā realitātē. Visi šie atmiņas līmeņi krustojas abu rakstnieču stāstos, veidojot sava veida laika spirāli, kurā ik pa brīdim kāds pagātnes notikums uzplaiksnī tagadnes norisēs, atklājot pagātnes un tagadnes sarežģītās attiecības un to izvērtējuma nepieciešamību.

### **Summary**

The topic of the article reflects the current interest of Latvian literature in the painful history of the 20th century, which is connected with the reevaluation of the events of the Second World War and the post-war Soviet period and their consequences. The article deals with examples of Egle's and Vīgante's short stories, highlighting the impact of historical and psychological conditions and the traumatic consequences of the characters' fates. The aim of the article is to



evaluate and characterise the reflection of the transference of historical trauma and the perspective of overcoming it in the short stories of both writers.

The stories by Egle from the collections “Gaismā” (In the light; 2015), “Svešie jeb miļenkij ti moj” (Strangers or miļenkij ti mo; 2018) and the stories by Vīgante from the collections “Ledus apelsīns” (Ice Orange; 2016) and “Tad jau redzēs!” (Then you will see!; 2018) were selected as examples for research. The works of both authors reflect the inclusion of individual stories in the collective trauma narrative. The chronotope of the historical memory in Egle’s and Vīgante’s prose forms a hard-to-exit labyrinth where the deep subconscious traumas resonate with insuperable conflicts after the Second World War and the unavoidable coincidences of circumstances. The characters’ fates, actions and lifestyles, highlighted in the prose of Egle and Vīgante, clearly demonstrate the consequences of trauma. Both writers highlight the limits of historical memory experience marked by the intersection of individual and collective memory. The theoretical-methodological approaches of postcolonial and memory theory provide an opportunity to evaluate the causes, nature and overcoming of the traumatic experiences of prose characters’. In the analysed texts, historical memory is illuminated in the communication of individual and collective memory, revealing the impact of the traumatic experience of history, which includes the heritability of trauma in several generations. However, at the same time, the possible options for overcoming and healing the trauma are also expressed. Remembrance is one of the most important ways to heal trauma, reducing the tension between history and memory.

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# TOWARD A TOOL KIT FOR CURATING INDIGENOUS ART: A NON-INDIGENOUS FACILITATOR'S PERSPECTIVE

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**Abstract.** *This article explores the experiences of a non-Sámi project manager and educator working with a group of Sámi curators within a unique educational program designed for the Sámi community. Based on artistic research, this study focuses on the challenges and learning opportunities encountered, emphasizing the importance of cultural exchange and understanding in the field of Indigenous art and curating. It discusses strategies applied by the non-Sámi project manager, language barriers, and the role of hands-on activities in facilitating collaboration. The research provides insights into the broader context of Indigenous curatorial practices globally and highlights the need for mutual respect and adaptation for effective collaboration in educational programs. The study's findings contribute to discussions on navigating cultural diversity within the context of Indigenous art and curating.*

**Keywords:** *curatorial practices, educational program, Indigenous Sámi art, Lithuania, non-Sámi project manager.*

## Introduction

Curatorial practice is a process that involves respecting artists and their artworks, promoting dialogue, and extending hospitality. It can take many forms and perspectives. In this study, I address curatorial practice as a societal process that integrates a non-Sámi curator into Sámi cultural contexts and promotes Sámi art in cross-national work. My research question was: How can cultural and knowledge exchanges between non-Sámi and Indigenous Sámi curators enhance curatorial practice tools?

The educational projects “Tool-kit: Curating Indigenous Art” (2023) and “Educational Sámi Curator Program” (2023) involved a group of Sámi curators, myself as a Lithuanian artist, curator, and the principal investigator (PI) of this study, along with Indigenous curators from New Zealand, Zambia, and Canada, and curators and scholars working with Indigenous artists from Australia and Sápmi. The project provided a platform for various perspectives on curating Indigenous art to be discussed through workshops, lectures, and open discussions. These were facilitated at the Sámi Center for Contemporary Art in Karasjok, Norway, in 2022 and 2023, where I served as the project manager and organizer, navigating diverse perspectives while being non-Sámi by nationality. This study

builds on my reflective analysis from the perspective of a manager and educator within this project.

In defining the tool kit for curating Indigenous art, I will begin with a story that describes my entry point into Sápmi. As a Lithuanian artist and curator who is not Sámi, my experience and understanding of art, culture, and curatorial practices intersect with the Sámi way of artistic creativity and tradition. Coming from an artist-run culture and having managed my project, BiteVilnius, in Lithuania for 10 years, stepping into the role of manager and curator at the Sámi Center for Contemporary Art merged my experiences of artist-run and institutional settings. I interpreted my curatorial task as welcoming people into the artistic space, creating a hospitable environment, and navigating to find the tone and themes for discussions to begin.

As I stepped into the Sámi Center for Contemporary Art, my curiosity was piqued, though I lacked a specific academic background in Sámi art. Therefore, my initial step was to understand what constitutes Sámi art. I saw myself as a learner while simultaneously setting up an educational program for Sámi curators. With an academic background in art, performance art, and curating, I believed I could construct and deliver the educational program. However, meeting the expectations of the Sámi Curator program for Sámi learners presented a unique challenge, as I did not possess knowledge of the Sámi language and needed to outline my understanding of Sámi culture.

Therefore, this study takes the form of tracing the strategies I employed for integration into the Sámi artistic milieu and examines how Sámi art and discussions about Sámi culture are integrated into international artistic events. It also explores the intersection of Sámi Indigenous art and curating with Indigenous cultures from around the globe.

This study presents a reflexive analysis of the developments within the Sámi curator educational program. The questions that follow are not direct research questions but rather reflections that guided my involvement with the project. Can a non-Sámi curator integrate into Sámi art and culture, and is such integration necessary? How is meaning constructed in the co-understanding and co-development of tools to curate Indigenous Sámi art alongside a group of Sámi curators learning together? Can a non-Sámi artist and curator contribute to the group of Sámi curators, and should one assume such a role when coming from a different community?

The article “Toward a Tool Kit for Curating Indigenous Art” is based on my notes and reflections and presents my perspective on the discussed issue. It explores strategies for navigating diverse perspectives in a single teaching environment and how to manage one’s own curatorial and artistic experience to avoid significant errors during public performances within the Indigenous Sámi culture that one is learning about. I view this paper as an open sharing of my

experiences and strategies, which may provide useful tools for working with Indigenous communities.

### Literature Review and Method

Professor Linda Tuhiwai Smith discusses the issues with terminology when addressing Indigenous communities, noting that terminology often originates from a Western perspective (2021). The term “Indigenous” is problematic due to its tendency to generalize diverse populations with varied experiences under imperialism (Smith, 2021). According to Cameron (2015), Indigenous art differs from Western art in that it is not created solely for aesthetic pleasure or ownership. Instead, it reflects vital information about living, embodies semantically deep meanings and perspectives, and is often communicated through symbols that connect individuals to themselves and their environment. In Sámi art, artistic forms are categorized into *duodji* and *daiida*, where *duodji* refers to traditional crafts and making, and *daiida* represents contemporary art (Griniuk & Guttorm, 2023; Guttorm, 2012; Guttorm, 2015). Indigenous Sámi artists engage with both forms of artistic expression, and educational programs in *duodji* at the bachelor’s and master’s level are offered at Sámi Allaskuvla / Sámi University of Applied Sciences.

Artistic research is a research method that emphasizes the use of artistic practices to generate new knowledge and insights, recognizing the value of art as a mode of inquiry and the research process itself as a creative act (Borgdorff, 2010; Vanlee & Ysebaert, 2019). It can take many forms and be applied to various topics and contexts (Vanlee & Ysebaert, 2019), although it is sometimes seen as politically driven and institutionalized (Hovland, 2022). In this study, artistic research is employed through the educational projects “Tool-kit: Curating Indigenous Art” (2022, 2023) and “Educational Sámi Curator Program” (2023). Both programs involved the same eight participants—curators with backgrounds in various areas of Sápmi—with two additional participants joining later. This brought together curatorial practices from both Indigenous and non-Indigenous perspectives within the educational project aimed at training Sámi curators, organized by a non-Sámi manager, curator, and educator affiliated with the project’s hosting institution. The project included a group of curators and speakers: Indigenous curators from New Zealand, Zambia, Canada, and Australia, and curators and scholars working with Indigenous artists from Australia and Sápmi. Through workshops, lectures, and open discussions, the project provided a platform for dialogue and knowledge exchange among these diverse perspectives.

Reflexive analysis in this research involves critically reflecting on the author’s own lived experiences and acquired knowledge (Probst, 2015) before engaging in Indigenous art curatorial contexts. This approach enables the author

to act as both educator and learner, positioning their perspective to navigate the diverse viewpoints of Indigenous and non-Indigenous individuals collaborating within Indigenous communities. Curating Indigenous art and working with educational projects within curatorial work is complex and dynamic, requiring a profound understanding of cultural protocols, histories, and traditions, which must be learned quickly upon entering a new milieu. By engaging in reflexive analysis, the researcher can navigate these complexities and develop more meaningful and collaborative relationships with the Indigenous communities with which they work. A limitation of reflexive analysis is its focus on the researcher's experiences (Probst, 2015); however, in this study, the main goal was to outline and explain the researcher's perspective and the challenges encountered within the current project, as well as to identify possible solutions to overcome them.

## **Cases**

From August 2022, I began working with a group of Indigenous Sámi curators who had previously met during a study trip co-organized by OCA (Office for Contemporary Art Norway), the Sámi Parliament, and the Sámi Center for Contemporary Art to the Venice Biennale in April 2022. After the trip, project management transitioned to the Sámi Center for Contemporary Art, and I assumed my role as the director of this institution. The program was limited to participants who had signed up for two-year non-graduate education and was underdeveloped, without any secured funding; therefore, it became my responsibility to develop the program's content and secure financial support. In August 2022, this task felt like creating spontaneous content, leading me to create the program for the 2022 Autumn Semester and fundraise for it during August 2022. Fortunately, by September 2022, funding was secured for the remainder of the year through Globus Opstart Nordic Culture Point, allowing us to conduct several sessions with both live and online participants, including Indigenous curators and artists, as well as non-Indigenous curators working with Indigenous art, such as myself. Incorporating these two perspectives was crucial for me.

As the project manager and a non-Indigenous Lithuanian artist, curator, and researcher, I found a connection to the theme of decolonization, drawing parallels with Lithuania's history of colonization by the Soviet Union until 1991. Indigenous knowledge was an entirely new domain for me. By integrating these Indigenous and non-Indigenous perspectives, I could relate to and understand the non-Indigenous curator's viewpoint while learning about the Indigenous perspective through the lectures.

For instance, in describing the lecture sessions by Mwape Mumbi and Gui Siui Durand, their presentations provided insights that I wished I had encountered as an art academy student or in other educational contexts. Mumbi's lecture offered informative, deep artistic and curatorial insights within an academic

framework. Conversely, Durand's lecture incorporated elements of a performance lecture, despite being digital. Durand discussed his involvement with performance art, both as a curator and practitioner, notably his participation in the 2017 Performance Art Bergen open festival—in which I also participated in 2015. This professional link to performance art was an important and unexpected connection for me. I deeply appreciated not only the content but also the format of the lecture. As the manager of and an educator within the educational program for Sámi curators, these points of connection were vital for me in facilitating discussions post-lectures.

After completing the first year of the program in 2022, I recognized the need for a more structured plan for the program's second year in 2023. With a refined understanding of the student group and their expectations, my goal was to ensure that the program would be both enriching and informative.

To achieve this, I dedicated time to planning the content for the entire year, integrating both online and on-site lectures, study trips, and practical curatorial work complemented by reflective writing assignments. In January 2023, I submitted my funding application to the Sámi Parliament. Fortunately, the application was successful, allowing us to secure support for the entire year's program.

We initiated the educational content in February, confident in the quality of our planned curriculum and the expertise of our contributors. Our focus for 2023 was on enhancing the students' understanding of Sámi art and culture, Indigenous art, and curating from Indigenous communities globally, as well as offering them practical experience in curating exhibitions. A program highlight was the practical curatorial work, allowing students to create and curate an exhibition based on research from the RDM museum collection in Karasjok in collaboration with cultural institutions.

## **Research Results**

The Sámi curator educational program stands out as unique, with no similar offerings currently available at any Nordic art academy or university. This program specifically addresses the Sámi Indigenous perspective on curatorial methods as a way to decolonize curatorial work.

In my discussions with various stakeholders, I have learned that several development programs and courses are being planned for the Arctic region, such as those at Tromsø Art Academy, initiated by PhD candidate Karoline Tampere, and the University of Lapland, initiated by Professor Maria Huhmarniemi. However, the uniqueness of the non-graduate program for Sámi curators at the Sámi Center for Contemporary Art lies in its design for students within the Sámi community, who have a Sámi background. This approach may seem exclusive to those without a Sámi background but who are interested in Sámi curatorial

practices. Nevertheless, in this first edition of the course, this was a deliberate and significant choice prompted by the current scarcity of curators in Sápmi who possess both curatorial education and practice, as well as a Sámi background.

In my role, I had to thoughtfully consider how to work and design the program, since despite being a scholar, curator, and artist with the qualifications to design and implement such an educational program, I am not Sámi. Thus, I actively acknowledged my non-Sámi, Baltic background, exploring commonalities and how I could interpret the culture and history of Sápmi through the lens of my own people, their history, Lithuania's colonial past, and postcolonial discourse.

To define the requirements for my approach, I realized that the course should include both Indigenous curators and scholars, as well as non-Indigenous ones who, like me, work with Indigenous art and culture. Early in the process, I needed to determine how I would work and what strategies I would apply in situations I might not fully understand as a non-Indigenous person, and how I could contribute to deepening discussions, drawing on my own country's colonial history. I frequently discussed Lithuania, highlighting the similarities in artistic expression tools used by Sámi and Lithuanian artists at events such as conferences. For instance, at the conference *Giving Voice to the Unspeakable*, I presented two cases of Sámi art projects and two cases of Lithuanian art to explore the tools used by artists and curators (Griniuk, 2023a). At another conference, *Cumulus Antwerp 2023*, I shared my background and entry point into Sámi Art from a Baltic perspective (Griniuk, 2023b).

By actively applying my Lithuanian background, I felt closely aligned with the topics discussed during the sessions, despite having a dual role as a manager and educator, as well as being a learner in areas unfamiliar to me, given my non-Sámi identity. As a Lithuanian artist, I developed an interest in the themes of the colonial past and the deportations of Lithuanians to Siberia, including the traditional Sámi area and the Kola Peninsula, by the Soviet regime. I began painting these themes in 2003, and they guided my journey as an artist as my practice evolved over the years. Thus, my work deeply engages with the themes of postcolonial memory and postmemory, as memories are narrated across generations (Hirsch, 2012). From my perspective, I was actively involved in the cultural and knowledge exchange between non-Sámi and Indigenous Sámi curators, and both perspectives positively influenced the development of curatorial practice tools. As a manager and facilitator, I learned significantly about Sámi perspectives and their content, and the parallels drawn between Sápmi and Lithuania introduced new insights to the participants and listeners. My engagement with both Indigenous and non-Indigenous speakers deepened my understanding of how curatorial work is conducted in Indigenous communities in Zambia, Canada, New Zealand, and Australia. I view these discussions and collaborations as ongoing, and as a manager of the projects, I am actively



exploring the possibility of the student group undertaking a study trip to one of these destinations. Additionally, I am working to facilitate an in-person meeting in Karasjok, where the course is held, with the speakers we initially met digitally. Student feedback indicates a preference for live interaction with the speakers beyond digital lectures, as this would allow them to discuss the content of the presentations in both formal and informal settings, such as over lunch or dinner.

Having a background in performance and technology, I aimed to share these skills with the curator group. Beyond traditional lectures, we delved into more hands-on activities to create interactive spaces for audiences. The participating curators designed an electronic instrument that produced sounds when the participants touched. If two people touched the instrument simultaneously, they could play tunes on each other's bodies, such as by touching hands. The most important aspect was that they were building these instruments themselves. This workshop was based on my previous research on performing in spaces where I was unfamiliar with the local language, creating interaction and audience involvement through DIY technology (Griniuk et al., 2023).

Another challenge was my lack of fluency in the Northern Sámi language, which was native to all the studying curators, although they were all fluent in English. While English was our common language of interaction, there were times I needed to step back during discussions held in Northern Sámi, whether with a speaker fluent in Sámi or within the group. When written assignments were involved, students often submitted them in Northern Sámi. Part of my learning process involved recognizing the importance of using Northern Sámi while not speaking the language myself. I learned to recede in live conversations and allocate sufficient time for written texts to be translated into English, enabling me and the involved advisor to provide feedback on the content. The challenge of not speaking the Sámi language was a significant area of learning for me, particularly in exploring how to ethically navigate an unfamiliar cultural context ethically. My approach to ethical navigation was influenced by my Lithuanian background.

The table below outlines the main findings of this research, addressing the three aspects of the study.

*Table 1 Main findings of the research (Designed by the author)*

<b>Indigenous art and curating globally meeting Sámi art and curating</b>	<b>Strategies applied by the non-Indigenous project manager and educator working with the Sámi curator group in education</b>	<b>The Baltic background of the project manager and educator interconnected with the Sámi background of the group of studying curators</b>
The Sámi curator educational program is	Due to the distance, part of the lectures were digital. The	I applied my Baltic background to understand

<p>unique and designed for students with a Sámi background, but non-Sámi individuals can also participate, currently in the roles of speakers and facilitators.</p>	<p>students preferred live contact with the speakers to discuss the presentation content in formal and informal settings over digital lectures. This suggests that such a project would require even higher funding to provide transport and accommodation for long-distance speakers.</p>	<p>what we had in common with the Sámi culture and history.</p>
<p>In my role as project manager and facilitator, but not being Sámi, I needed to carefully consider how to work and design the program.</p>	<p>I am currently exploring the possibility of a study trip to one of the countries involved in the project, for example, New Zealand, that would facilitate deeper cultural exchange for the group of involved curators.</p>	<p>I incorporated my background and active skill-sharing within the interaction building. I explored hands-on activities to create interactive spaces for audiences based on my previous research on DIY technology.</p>
<p>The involvement of Indigenous and non-Indigenous speakers from Zambia, Canada, New Zealand, and Australia helped to broaden the understanding of Indigenous curatorial practices globally from the perspective of those from Indigenous communities, as well as those working with Indigenous communities.</p>	<p>The criterion for non-Indigenous speakers and contributors was holding a PhD degree and having extensive practice and publication about their work as curators with Indigenous art and art projects. This ensured the quality of the content and provided a non-Indigenous perspective on scholarship and peer-reviewed materials for students to discuss and offer their opinions on.</p>	<p>When speaking publicly or at conferences, I would always mention my background. In some conference presentations, I actively and extensively discussed how the theme of the colonial past is addressed by Sámi and Lithuanian artists. To this end, I used my own artistic practice as one of the cases, as I have worked with themes of postmemory and postcolonial memory in Lithuania throughout my entire artistic career.</p>

## **Conclusion**

The Indigenous art and curating field is expanding rapidly, requiring a profound grasp of Indigenous cultures and histories. In this study, I, a non-Sámi project manager and educator with a Lithuanian background, explore my experience working with Sámi curators in an educational program through artistic research and reflexive analysis. A significant challenge was the language barrier, which necessitated strategic participation and translation efforts. The program, initially designed for Sámi curators, also welcomed non-Sámi individuals as

speakers and facilitators, fostering unique cultural exchanges. Collaboration with Indigenous and non-Indigenous speakers from around the world enriched our understanding of global Indigenous curatorial practices. Hands-on activities, such as creating interactive sound instruments, added dynamism to the course content. This study provides valuable insights for anyone involved in Indigenous art and curating education.

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## GENRE-STYLE CONSTANTS OF CHAMBER SYMPHONY BY E. STANKOVYCH

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**Abstract.** *The originality of the creative handwriting of Ukrainian composers of the end of the XX and the first quarter of the XXI century is becoming an urgent research problem of our time. A large number of components of the musical language of artistic compositions, understanding of new value orientations, genre-style synthesis - these and other features constitute the poetics of the work of domestic artists of the mentioned period. E. Stankovych took an active place among the constellation of Ukrainian composers of the end of the 20th and the first quarter of the 21st century. The article emphasizes that the chamber symphony genre in the composer's work shows the peculiarities of his creative handwriting. It was determined that the composer's legacy of E. Stankovych, in particular the study of his chamber symphonies, is a production for the training of teachers of artistic disciplines. After all, chamber symphonies reflect constant reforms in the field of musical language and composer's thinking. The purpose of the research is to identify genre and stylistic features of chamber symphonies by E. Stankovych. To achieve the goal, historiographical, genre-stylistic and comparative research methods were used. The genre-style model of E. Stankovich's chamber symphonies shows the specificity of postmodern art, which takes place in genre synthesis, understanding the semantic potential of timbre, and transformation of images. Fifteen chamber symphonies of E. Stankovych have a common principle of construction, which gives grounds for confirming the opinion about the emergence of the author's metastyle.*

**Keywords.** *artistic education, chamber symphony, genre, style, musical thinking, Ukrainian musical culture, worldview.*

### Introduction

The modern perspective of domestic musicology is characterized by close attention to the heritage of national musical creativity of the second half of the XX – beginning of the XXI centuries. This period became the time of the breakthrough of the Ukrainian musical school on the world stage, penetration of the latest European trends into Ukrainian music. This process led to the discovery by domestic authors of new compositional techniques, to the enrichment of

intonation vocabulary, stylistic renewal of the musical language of their works, which to a certain extent contributed to the creation of a new picture of the world, the expansion of the creative possibilities of artists.

Among the many genres that received intensive development in the specified period, a prominent place belongs to the chamber symphony. The chamber symphony became a relevant work of the last century, incorporating the latest trends, synthesizing styles and genres, and creating a platform for composers' creative pursuits. E. Stankovich's chamber symphonies are a vivid evidence of this. «The role and place of Evgeny Fedorovych Stankovych in the history of Ukrainian music cultures are well understood in domestic musicology. An outstanding composer musical and public figure, professor, academician of the National Academy of Arts of Ukraine, laureate of numerous national and international prizes and awards, national artist of Ukraine, Hero of Ukraine – all these characteristics and titles become special scales, when the name of Evgeny Stankovych is next to them» (Chekan).

The chamber symphony genre in the domestic musical space was marked by a desire for innovation, which contributed to the formation of new positions of the composer's thinking, the formation of a new system of musical means. The chamber symphony is of great importance in the practice of art education. After all, the phenomenological markers of the chamber symphony are embodied in various transformations and demonstrate the cultural trends of the time. Understanding these and other features determines the professional training of teachers of art disciplines. «Genre and style diversity of the repertoire (activates the performance of students by including in the learning process of works of different styles and genres, from ancient to modern)» (Mozgalova et al., 2022, p.199). «The language is the most relevant issue since it is the principal factor of the formation of national consciousness, development of culture and art» (Moskvichova et al., 2019, p. 311).

### **Literature review**

Many musicologists have pondered the undeniable value of the chamber symphony in the context of Ukrainian musical culture. O. Zinkevich (Zinkevich, 1999), M. Emelianenko (Emelianenko) and others studied the history of this genre in the context of national culture. Bolesławska notes that in the second half of the 20th century, the symphony seems to have lost its meaning and status, and it is difficult to predict any direction of its possible development in the future. (Bolesławska, 1956, p. 40). In our opinion, this statement applies to chamber symphonies.

The study of E. Stankovych's work can be found in the works of O. Zinkevich (Zinkevich, 1999)– the most important researcher of Stankovych's work in Ukraine and her students – Y. Chekan (Chekan), H. Lunina (Lunina,

2013). In particular, S. Lisetskyi, analyzing the works of E. Stankovych, singled out chamberness according to the following features: the small size of the works, the miniatureness of each part, episode, a relatively small composition of performers, the laconicism of the used performance tools, the avoidance of large sonorities, etc. (Lisetskyi, 1976, p. 36). It should be noted that H. Lunina, characterizing the process of the formation of E. Stankovich's style, notes that the features of early opus and compositions of the mature period echo. This opinion is especially important in the context of the study of the chamber symphonies of E. Stankovich.

In the dissertation «Chamberness as a genre-stylistic paradigm of instrumental and ensemble creativity» L. Povzun divides the concept of "chamberness" according to external and internal formal features. External – focusing on small spaces, a small number of instrumentalists-performers, a limited listening audience; internal – the genre semantics of chamber-instrumental works, which is the reproduction of the deep meaning of human existence (Reshetilov, 2021).

A. Kolosovych, researching the issue of the early composer's style, singles out two levels - the textual level, which consists of identifying the features of the composer's musical thinking and the analysis of the expressive means of the works, and the contextual level, which is characterized by the historical and stylistic trends of the musical culture of the corresponding time, the specifics of the national style, school, to which the author belongs (Kolosovych, 2011). Considering this statement, let us emphasize that the musical language of chamber symphonies is permanent.

Among the issues raised in the studies of A. Kolosovych (2011), O. Kolisnyk (2017), and E. Sirenko (2017), the problem of the chamber symphony genre is present, but it is not fully covered. Therefore, it is important to make an attempt to fill the indicated gap, focusing attention on the ways of development of the chamber symphony genre within the works of E. Stankovich, on the leading features of its interpretation by the artist.

The purpose of the research is to identify genre and stylistic features of chamber symphonies by E. Stankovych.

## **Methodology**

Historiographical, genre-stylistic and comparative research methods were used in the work. The historiographical method was used in order to reveal the historical regularities of the development of the chamber symphony genre. The genre-style method made it possible to determine the traditional and innovative features of the chamber symphony genre. The use of the comparison method made it possible to identify the common features of the composer's chamber symphonies. The material of the research is the scores of chamber symphonies by

E. Stankovich. The criteria for choosing this research material are due to the fact that chamber symphonies are united by the presence of common features: soloing instrument parts, the use of non-traditional playing techniques, timbre dramaturgy.

### **Research results**

The historical and cultural significance of E. Stankovych's work cannot be overestimated. His expressive style, which reveals the composer as a thinker-symphonist, is connected with a new stage of the formation of Ukrainian culture. The conceptualism of the artist's thinking, woven from the embodiment of life's realities, determines the innovation of the musical language, the enrichment of the spheres of genre creation.

E. Stankovich's compositional poetics is formed under the influence of the transformation of traditional genre canons and new musical vocabulary, stylistic kaleidoscopicity. These and other principles of music of the late XX – first quarter of the XX century saturate creativity with new compositional forms, genre nominations, and individual artistic content. The assimilation of the author's style and the style of the era is connected with integrative possibilities, which involve polysemantic formations, wide possibilities of synthesizing material. Based on this, the individual composer's orientation models genre laws. The complex interweaving of musical systems creates many options for combinations of figurative layers of drama, genre and style processes, forming compositional innovations in each work of the composer. E. Stankovich is constantly experimenting in the field of drama, as if veiling the genre orientation of his works, combining the intersection of different planes in a multi-layered architecture.

The following is distinguished among the features of the oeuvre of domestic composers of the period concerned: genre-style metamorphoses, saturation of works with folklore intonations, polystylistics, techniques of aleatory music, pointillism, sonorism, and others. It should be mentioned that the free use of genre models applies to all musical categories (Mozgalova, & Novosadova, 2022, p.58). Chamber symphonies of E. Stankovych are marked by a characteristic use of unconventional instrumentation:

- flute, clarinet, trombone, harp, piano, violin in Chamber Symphony No.1;
- Chamber Symphony No. 2 «Meditation» was composed for two flutes, oboe, clarinet, bassoon, piano, percussion and string instruments;
- the instrumental palette of Chamber Symphony No. 3 is represented by flute and string orchestra;

- baritone, piano and string orchestra – Chamber Symphony No.4 «In Memory of the Poet» with lyrics by Pushkin;
- Chamber Symphony No. 5 «Secret Calls» was composed for clarinet and strings;
- Chamber Symphony No. 6 «Alarms of Autumn Days» was composed for French horn and chamber orchestra;
- instrumental set of Chamber Symphony No7 – violin, harpsichord, celesta, piano and chamber orchestra;
- Chamber Symphony No. 8 was composed for vocal, flute, clarinet, violin, cello, piano and percussion instruments;
- Chamber Symphony No. 9 «Quid pro quo» – for solo piano and string chamber orchestra;
- Chamber Symphony No. 10 «Dictum No. 2» was written for piano and string orchestra (Mozgalova, & Novosadova, 2022, pp.58-59).

Among the author's notes of E. Stankovych's handwriting, it is worth noting the use of timbre dramaturgy. Among the techniques used by E. Stankovich, we note timbre intensification, timbre collapse (in the final sections), timbre crescendo (at the beginning of the piece). Timbre, as the main element of E. Stankovych's musical language, subordinates the organization of the work. Its properties can replace harmony, melody, thematics – traditional basic elements of a musical composition.

For example, the dramaturgy of E. Stankovich's First Chamber Symphony, written for seven performers (flute, clarinet, trombone, timpani, xylophone, bells, harp, piano, and violin), is based on the alternation of timbres of different instruments. And part of the Preludes symphony, consisting of 21 micro-preludes, is «an example of instrumental theater in the form of an "intricate mosaic created according to a clear logic» (Kolisnik, 2017, p. 136). In the Second Chamber Symphony «Meditation» the timbres of certain instruments play an important role in the embodiment of images. In particular, «the composer entrusts the main themes of the symphony to the flute in G - an instrument with extraordinary expressive emotional capabilities on the one hand, and an instrument that can best convey the state of meditation - on the other» (Kolisnik, 2017, p. 146). «One of the most important tools in the Sixth Chamber Symphony is the sound-imaging aspect: the coloristic juxtaposition of the timbres of various instruments, as well as special sound-imaging techniques of performance (horn with mute, string flags); sound imitation of folk nagrases, bells, quasi-Carpathian melos (in part I in the flute part)» (Kolisnik, 2017, p. 166). In E. Stankovich's chamber works, timbre interacts with articulation and dynamics. An interesting technique is the differentiation of dynamic shades that develop in the instrument, as well as simultaneously in other parts. E. Stankovich often uses timbre imitation. For



example, we find an imitation of the sound of bells in the Second Chamber Symphony «Meditation». The timbre imitation of the sound of folk instruments is present in the Sixth Chamber Symphony - a coloristic comparison of timbres of different instruments, as well as special sound imaging techniques, sound imitation of folk songs, bells, quasi-Carpathian melos is presented in a very diverse way (Kolisnik, 2017, p. 166).

The serial technique becomes the leading organization of musical material: on its basis, textural principles are created, E. Stankovich freely combines the series with other compositional techniques, compares it with tonal organization. The above allows us to talk about the individual interpretation of serial writing, which is composed within the framework of symphonic music and transferred to works of other genres. For example, from the very first measures of the Third Chamber Symphony, E. Stankovich forms a cluster vertical es-ges-f, which continues to develop. In harmony, timbral compounds supplant chord progressions. It is based on equal twelve-tonality and free use of dissonance. Harmonic consonances, namely their function in the musical organization, approaches timbre, becoming color.

The canvas of E. Stankovych's chamber symphonies is built up by clusters, sonorous layers. For example, the important compositional instruments of chamber symphony No. 7 «Paths and steps» are cluster chords, glissaded endings of phrases in themes, rhythmic aleatorics in the form of arbitrary acceleration or deceleration of a rhythmic pattern, playing trills by each instrument at a different tempo and at a relatively different pitch.

Polyphonic thinking, which is generally characteristic of composer poetics of the 20th century, is also noted in the chamber symphonies of E. Stankovich. It consists in the canonical introduction of voices, conducting themes, roll calls between different orchestral groups. We observe this in the First, Third, Sixth Chamber Symphonies.

The one-part composition of the Fifth Chamber Symphony is built on the basis of the plot theatricality of the action, the change of contrasting episodes, shots, which includes: lyrical-dramatic coloring of climaxes, scherzo melos, pointillist watercolors. The intonation canvas of the symphony is realized through the choice of instruments: the special timbre of the clarinet, which represents the real sound world, conducts a dialogue with the string quartet, which has great expressive possibilities. The composition of the orchestra and the presence of the soloist's part allow us to draw parallels with the concert genre. On the other hand, the features of the symphony are manifested in the philosophical idea, through thematic development, the tendency towards monothematism in the cycle. The division of strings into a large number of lines is one of the most common textural techniques in the music of the second half of the XX century. Such a solution allows, on the one hand, to create a more transparent sound (combined with quiet dynamics and a not very dense arrangement of lines), or vice versa - a rich,

expressive sound with a closer arrangement of voices and loud dynamics. Let's note the divis of the string group in relation to each part, which makes it possible to use them in polyphonic chords that fill the entire vertical. Playing *Dietro sul ponticello*, *molto ritmato*, *glissando* contributes to color effects.

The Ninth Chamber Symphony was commissioned by the organizers of the Warsaw Autumn International Contemporary Music Festival in 2000. The symphony orchestra consists of nine violins, two violas, two cellos and a double bass. One of the peculiarities is that E. Stankovich does not divide violins into first and second, but uses *divisi*. The performance composition of the work - solo piano and string quartet - immediately attracts attention. The juxtaposition of *tutti* and *solo*, the soloist's virtuoso performance - all this allows us to draw parallels with the concert genre. The piano, like the string group, has technical flexibility, plasticity, wide timbre possibilities, which realizes the expressive embodiment of images.

### **Conclusions**

E. Stankovych is one of the most famous figures of Ukrainian musical culture. He is a bold innovator, whose style is characterized by updating all parameters of musical syntax. In particular, the reformation affected genre and style laws. The chamber symphony became the creative laboratory of the composer, in which E. Stankovich's boldest ideas were embodied. Genre dualism is one of the important features of E. Stankovych's interpretation of the chamber symphony. The composer combines features of a symphony and a concerto (Fifth Chamber Symphony, Ninth Chamber Symphony). It is also worth mentioning the use of techniques of timbre dramaturgy, which play one of the main semantic roles. We attribute the listed features to the conceptual features of E. Stankovych's creative method.

The music of E. Stankovych is a whole world in which the philosophical content is uniquely combined with the mastery of musical sound recording. From the first bars of sound, his music captivates and does not let go until the last sound subsides. Born from silence, it appeals to the depths of the universe, the tragedy of human existence, prompts reflection, understanding of eternal values. Freedom of musical thinking, rejection of established features and canons, individuality of structures – these and other features distinguish the unique compositional handwriting of E. Stankovych.

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# THE NEW URBAN CONCEPT OF HANSEATIC CITIES OF THE RIGA ARCHBISHOPRIC IN THE 13<sup>TH</sup>– 14<sup>TH</sup> CENTURIES

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**Abstract.** Bishop of Riga Albert established bishoprics and centers of spiritual life on the Southern Baltic Sea coast to subjugate the local population. Sacred buildings were the main architectural highlights of the urban environment. Later, Riga became the main military base for expansion in the Baltics, the economic base of the Teutonic Order, and the administrative center of the Archbishopric of Riga (1255–1562). On the Baltic Sea coast, new bishoprics began to be established in the lands of the subject Prussians. Important cities were involved in the Hanseatic League. Consequently, the concept of urban planning and construction changed in the 13<sup>th</sup>–14<sup>th</sup> centuries. Research object: urban space of the Hanseatic League cities on the Prussian lands in the 13<sup>th</sup>–14<sup>th</sup> centuries. Research problem: sacral buildings changed urban aesthetics and the urban space of the Hanseatic cities, which has not been studied enough to preserve their identity. Research goal: analysis of the impact of churches for the citizenship parishes on the planning, visual image, and architectural-spatial development of the Hanseatic League cities in the lands of the subject Prussians. Novelty: analysis of common and local features of the structural evolution of the Hanseatic cities under the authority of the Archbishopric of Riga during the 13<sup>th</sup> and 14<sup>th</sup> centuries. Research methods: analysis of archive documents, projects, cartographic materials, and studies of published literature.

**Keywords:** architectural highlights, cathedral, church for the citizenship Catholic Parish, Hanseatic League, identity, medieval town planning, urban environment.

## Introduction

A climate change in 8000 BC allowed hunters and foragers to continuously inhabit areas, which provided daily sustenance. Hunters influenced by farmers of the Linear Pottery-culture settled on the South Baltic coast in 3000 BC. The Corded Ware culture, which comprised a broad archaeological horizon of Europe between around 3000 BC–2350 BC, reached Pomerania in 2400 BC. Domestic horses were introduced. In the early 2<sup>nd</sup> millennium BC, descendants of the Proto-Indo-Europeans had reached wide across Eurasia, including the north of Europe. Both Linear Pottery and Corded Ware culture have been associated with Indo-Europeans. During the Bronze Age, the Lusatian culture dominated east of the Oder River (Polish: *Odra*), while the western Pomeranian areas were part of the Nordic Bronze Age cultures, and throughout the Iron Age, the people belonged to

the Jastorf culture associated with Germanic peoples. The Pomeranian culture succeeded the Lusatian culture whose ethnic category and successors are debated.

An Indo-European people Veneti (Latin: *Venethae*, *Venedae*, *Venethi*, *Venedi*) who inhabited Northeastern Italy, Germanic peoples (Goths, Rugians, and Gepids), and possibly Slavs are assumed to have been bearers of these cultures.

The physical infrastructure was vital to the maintenance and development of the Roman Republic (Latin: *Res publica Romana*, *Libera-res publica Romana*; 509–27 BC). It helped in the daily commute of civilians, covering nations of different languages and cultures into a single institution. A branch of the road from the Mediterranean coast named the Amber Road (Fig. 1) and called officially *Via Sucinaria Romana* by Romans possibly was the shortest track from the starting point of the Roman *castra legionis* with a marketplace and a naval base Carnunto beyond the Danube to a large West Slavic fortified settlement of Biskupin belonging to periods of 800–650 BC and 650–475 BC in North-Central Poland today. After that, this road reached the strategically important Prussian center of Truso (Lithuanian: *Drusuo*, *Drūsas*, Polish, German: *Truso*) on the shores of the Vistula Lagoon. West Baltic tribes Natangians, Pomesanians, Pogesanians, Nadruvians, Bartians, Warmians, and Sambians got the common name Prussians (Fig. 2). The Galindians whose name *Galinda* was thought to derive from the Baltic word *galas* /the end/, alluding to the fact that they settled further west and further east than any other Baltic Tribe, were mentioned in the 2<sup>nd</sup> century for the first time. Galindians were two distinct Baltic tribes. Most commonly, the Galindians refer to the Western Galindians who lived to the southeast of the Prussians. According to the *Chronicon terrae Prussiae* /The Chronicle of the Prussian Land/ written by Peter of Dusburg (Petrus 1326), the now-extinct Baltic tribe Skalvians who originally inhabited the Lower Neman area and from the late 1<sup>st</sup> millennium BC until the mid-7<sup>th</sup> century AD lived in Scalovia or Skalvia (Lithuanian: *Skalva*, German: *Schalauen*, Polish: *Skalowia*, Latin: *Sclavonia*, *Schlavonia*) to the south of Curonian and Samogitian adjacent lands and the northeast between the Pasłęka (German: *Passarge*, Polish: *Pasłęka*, Lithuanian: *Pasargė*) and Daugava Rivers were assumed to have been related to Western Balts such as the Cours or Curonians referred to as *Cori* and *Chori* in Viking Sagas, and more distantly to the Prussians.

The old road in the 1<sup>st</sup> century AD lasted from the Pogesian trade center of Truso to the Sambia Peninsula (German: *Samland*, Lithuanian: *Sembos pusiasalis*) or the densely Prussian-inhabited region Sambia (Fig. 2). Greek historian and geographer Herodotus (about 484–425 BC) mentioned Sambia for the first time and called it ‘amber land’. The fishing village of Skanevīs (Prussian: *Schonewik*, German: *Schönewick*) developed on the East Baltic coast rich in amber. The Old Prussian tribe Sambians engaged in the amber trade inhabited the wooden fort of Twangste (Prussian: *tvinksta* /a pond made by a sluice/) on a hill

in an oak forest and established contacts with foreign nations. German chronicler Adam of Bremen (before 1050–1081/1085 AD) first mentioned the name of this clan in 1073. He calls them ‘the most humane people’. In the middle reaches of the Pregola or Pregolya River, two arms – the ‘New Pregola’ or the northern branch, and the ‘Old Pregola’ or the southern branch – enclosed Twangste Fort. It was north of the boggy island and protected the fishing village of Lipnik and the Prussian farming villages of Trageim and Sakheim. Until the 8<sup>th</sup> century, this may have been an insignificant village (later Königsberg) (Fig. 3) as international trade routes passed along lagoon beaches, inland lagoon shores, and of course by the sea. Only inland trade routes led along the Pregola, which starts at the confluence of the Instruch and Angrapa Rivers and through the Vistula Lagoon drains into the sea. *Pregel* was derived from the Prussian word *preigillis* /at the lower point/ or came from older names *Pregolla* and *Prigora* (*prie* and *gora* /near the hill/). It related to the fact that its source currents were united on one hill.

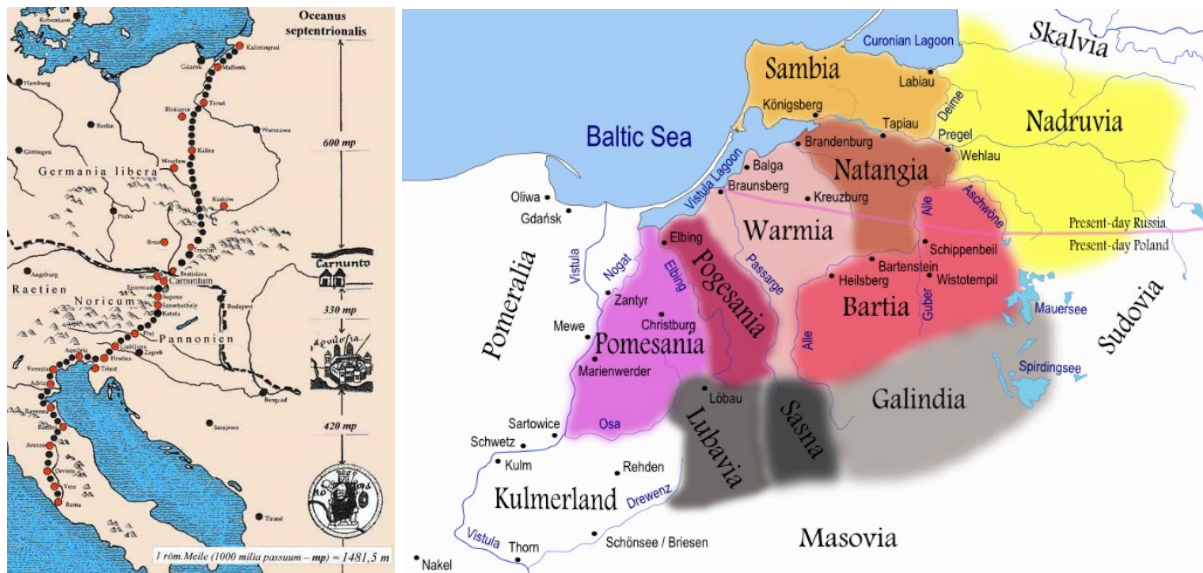


Figure 1. The trace of the Amber Road from the Mediterranean coast to coastal areas of the Baltic Sea and Sambia. ([https://lvexperiment.files.wordpress.com/2015/05/alte\\_karte.jpg](https://lvexperiment.files.wordpress.com/2015/05/alte_karte.jpg))  
 Figure 2. Map of Prussian clans during the 13<sup>th</sup> century. 2007 (Online 13.01.2024, source: [https://commons.wikimedia.org/wiki/File:Prussian\\_clans\\_13th\\_century.png](https://commons.wikimedia.org/wiki/File:Prussian_clans_13th_century.png))



**Figure 3. Cartographer, scientist, and map publisher Dr. Karl Spruner von Merz (1803–1892) and one of the most important German cartographic engravers of the 19<sup>th</sup> century Johan Georg Perthes (1749–1816). Excerpt from the historical map of Poland and Lithuania under the Jagiellon Dynasty from 1386 to 1572. 1854 (Spruner & Perthes, 1854)**

Beginning in the 3<sup>rd</sup> century in Pomerania (German, Swedish: *Pommern*, Polish: *Pomorze*, Latin: *Pomerania*, *Pomorania*) (Fig. 3), many settlements were abandoned, marking the beginning of the Migration Period taken to have begun in 375 (possibly as early as 300) and ended in 568. It is assumed that Burgundians, Goths, and Gepids with parts of the Rugians left Pomerania, while some Veneti, Vidivarii, and other Germanic groups remained and formed the Gustow, Debczyn, and late Willenberg cultures that existed in Pomerania until the 6<sup>th</sup> century. The southward movement of Germanic tribes and Veneti had left Pomerania largely depopulated by the 7<sup>th</sup> century. Between 650 and 850, West Slavic tribes settled in Pomerania. These tribes who were collectively known as ‘Pomeranians’ settled between the Oder and Vistula Rivers. Veleti (later Liuticians) arrived west of the Oder. The distinct tribe Rani was based on the island of Rügen (Fig. 3) and the adjacent mainland. In the 8<sup>th</sup> and 9<sup>th</sup> centuries, Slavic-Scandinavian emporia were set up along the coastline as powerful centers of craft and trade.

Trade from the multi-ethnic Slavic-Scandinavian emporium Reric built around 700 on the South Baltic coast continued further south along the Amber Road, which led southwest and southeast to the Black Sea, North Africa, and the Middle East. In the turn of the 7<sup>th</sup>–8<sup>th</sup> centuries, a trading post of Truso arose on the Amber Road and became the Prussian trade center on the road from the Vistula Lagoon to the seaport near the Vistula Delta. Truso at the Vistula’s estuary right arm of Nogat into the mouth of the Vistula had trade links with Birka

founded around 750 on the island in Lake Malar and played for Prussians the same central role as the large trade center Hedeby founded around 770 in a convenient place for Danish Vikings at the southern end of Jutland. Ships and merchants from all over the world from the end of the 8<sup>th</sup> to the late 10<sup>th</sup> century or the mid-11<sup>th</sup> century visited a commercial settlement (emporium) Truso at the Ifing (Old Norse: *Ífingr*, Polish: *Elbląg*) River on the South Baltic coast. The road from Truso lasted to the Sambian fishing village of Schonewik, which got its name from the Prussian word *Skanevis* /resounding, ringing, resounding/ given to the river. Merchants from Southern Europe and Scandinavia provided an exchange of goods in the Sambian village of Palweniken (Prussian: *Palweniken* (1398), German: *Palmnicken*, Lithuanian: *Palmininkai*, *Palvininkai*, Polish: *Palmniki*, now Russian: *Янтарный*) by the Baltic Sea. In Sembia, the Prussian major center in the early 9<sup>th</sup> century had sprung up on a strategically and geographically convenient place at the River Pregola's estuary in the Baltic Sea.

In an ancient West Slavic settlement of Stettin (Polish: *Szczecin*, Latvian: *Ščecina*, Latin: *Stetinum*, *Sedinum*) (Fig. 3), which since at least the 8<sup>th</sup> century has existed on the River Oder's coast, the Slavs erected a stronghold and since the 9<sup>th</sup> century fortified it and expanded towards the Oder. In the late 8<sup>th</sup> century, the town of Wolin (Polish: *Wolin*, German: *Wollin*) arose at the Oder's mouth in the picturesque Baltic coast with many beaches, lakes, and woodlands on the southern tip of the isle of Wolin separated from the mainland by the Szczecin Lagoon. A settlement at the Oder's mouth started by the end of the Vistula Glacial Stage, about 13 000 years ago. The main part of the town acquired new, stronger fortifications, including a wooden palisade made of halved tree trunks, a rampart, and a retaining wall. The road led from the Scandinavian trade centers of Birka and Visby, as well as Wolin Island at the edge of the Dziwna Strait, and passed the Slavic settlement of Starigard or Stargard (Polish: *Stargard Szczeciński*, Latin: *Stargardia*, German: *Stargard in Pommern*, *Stargard an der Ihna*) (Fig. 3) founded in the 8<sup>th</sup> century on the South Baltic coast, between cities of Lübeck and Kiel. The oldest settlement on Stargard was dated to about 680. Stargard became the chief town of the Slavic peoples Wagiri (also Wagri or Wagrians) who migrated as far west as the Elbe River in about the 6<sup>th</sup> century and were also known as the Veneti and the Polabian Slavic tribe of the Obotrites. They arrived at about 700. The Pomeranian or Kashubian (Slavic) name *Stargard* was formed by a combination of the words 'old' and 'grod' (Polish: *gród*) means 'old settlement' or 'old town' or 'old castle'. The location of *Castrum Stargard* (Slavic: *stari gord*, Icelandic: *Aldinborg*, Low German: *Oldenburg*) mentioned in 1140 has not been determined. In the 8<sup>th</sup> century, the Slavic settlement of Osetno (Polish: *osada Osetno*) had developed south of the modern city center. Stargard had trade ties not only in Central and Northern Europe but also in Anatolia. Ramparts of Stargard have existed since the early 8<sup>th</sup> century. Adam of Bremen reports that ships from *portus maritimus* were sent to the densely Prussian-



inhabited region Sambia, the land of Swedes, and even Greece. He mentioned about Stargard: ‘*Populi Sclavorum multi, quorum primi sunt ab occidente confines Transalbanis Waigri, eorum civitas Aldinburg maritima. Deinde secuntur Obodriti, qui nunc Reregi vocantur, et civitas eorum Magnopolis*’ /There are many Slavic peoples, among them the most western are the Wagiri living on the border with the Transalbings, their city Aldinborg lying by the sea. Then follow the Obotrites called the Reregi and their city of Magnopolis/.’ Ships from this powerful military and commercial center reached Novgorod (German: *Naugard*, Viking: *Holmgård*, Latin: *Novogardia Magna*, Russian: *Новгород*; around 5<sup>th</sup>–6<sup>th</sup> century) and Kyiv. The urban center of North Germanic Vikings was known as *Brandehuse* /burned houses/, indicating the bellicose times. In the second half of the 10<sup>th</sup> century, Stargard lost its significance and passed into the possession of the Archdiocese of Hamburg-Bremen. It received the Low German name Aldinborg or Oldenburg. Stargard/Oldenburg was mentioned for the first time in 1108 and remained the Slavic competitor of Hedeby on the Baltic trade for centuries. which has not been studied enough to preserve their identity

Research goal: analysis of changes in aesthetics and urban space of cities involved in the Baltic trade and the impact of parish churches and cathedrals on the planning, visual image, and architectural-spatial development of bishopric centers and the Hanseatic League cities in the lands of the subject Prussians. Research methods: analysis of archive documents, cartographic materials, and studies of published literature.

### **Establishment of bishoprics on the Baltic coastal areas**

At the beginning of the 9<sup>th</sup> century, the economic boom contributed to the creation of roads and marketplaces, trade connections, the movement of pilgrims, and the revival of cities and culture in Europe. Charlemagne from 800 until 814 became the Holy Roman Emperor and paid great attention to the rebuilding of monastery churches, and gave rise to monasteries, which formed the basis of a new administrative system of the Holy Roman Empire. It was a feudal monarchy that spanned Central Europe from the 800s to the 1500s. A Catholic missionary Willehad became the first Bishop of Bremen and built the cathedral at Market Square next to merchants’ guilds and town seniors’ houses, the Town Hall, and Roland’s Statue in the city of Bremen mentioned for the first time in documents of 782. The Bremen Cathedral (German: *Bremer St. Petri Dom*) was confirmed in 789. The Saxons burnt down this wooden building. The second Bishop of Bremen Willerich built the Bremen Cathedral (805) became the main building of the Prince-Archbishopric of Bremen (German: *Fürsterzbistum Bremen*). Predecessors of cathedrals became basilicas built by the Roman Emperor (306–337) Constantinus I Magnus and his descendants. Constantinus gave the Roman Bishop the Lateran Palace (Latin: *Palatium Apostolicum Lateranense*) as a gift,

and in 313, the construction of the most ancient Roman cathedral – the Cathedral of the Most Holy Saviour and Saints John the Baptist, also the Archbasilica of St. John in Lateran (Latin: *Archibasilica Sanctissimi Salvatoris*; 324, rebuilt after 430) began. In the Vatican (Latin: *Status Civitatis Vaticanæ*), the five-nave Papal Basilica of St. Peter (Latin: *Basilica Vaticana, Basilica Sancti Petri*; 324/326–349) with a perpendicular volume to the longitudinal axis or the transept was built instead of the Circus of Nero. The bishop's residence and the archbasilica (Fig. 4) were included in the perimeter building complex (Ozola 2019).

On an island at the Elbe's mouth, Charlemagne made a stone castle (808), and the first church consecrated in 810 became a diocesan center in Hamburg. St. Mary's Cathedral (German: *Hamburger Dom, Alter Mariendom, St. Marien-Dom*) was built around 811. Instead of the burnt wooden church, Benedictine monk Ansgar (801–865) built St. Mary's Cathedral with a stone tower (Fig. 5) to provide observation, protection, and sacral ritual functions. In 831, he became the archbishop, and Christians founded the Roman Catholic Archdiocese of Hamburg (Latin: *Archidioecesis Hamburgensis*, German: *Erzbistum Hamburg*; 831). Due to the Polish attack, he moved in 848 a residence to Bremen and became the first archbishop of the Archbishopric of Hamburg-Bremen (Latin: *Episcopatus Bremensis*, German: *Erzbistum Bremen*) founded in alliance with Bremen in 847. The Christianity Centre was opened in the Bishopric of Lund (Swedish: *Lunds stift*) founded in 1060. There, bishops were the Germans who maintained close links with the Archbishopric of Hamburg-Bremen. In Hamburg, St. Peter's Church was built at the start of 1189 near the original Hammaburg area, where the previous cathedral existed. One of the main stone churches (German: *Hamburger Hauptkirchen*) was a market church (*ecclesia forensis*) built instead of wooden houses at the marketplace, where a Town Hall was located as well. A secular power center formed near the Old Castle (German: *Alster Burg*). In the Old Town, the second oldest church (German: *Marktkirche*) named after Simon Petrus by Roman Pope (1216–1227) Honorius III was first documented in 1195. On an island to the west of the Old Town, St. Nichola's Church (German: *Hauptkirche St. Nikolai, St.-Nikolai-Kirche*; 1189–1195) replaced a small wooden chapel at the market (German: *Rödingsmarkt*). Near, the New Castle (German: *Neue Burg*) existed around 1200 (Ozola 2023a).



**Figure 4. An ecclesiastical archaeologist Giovanni Giustino Ciampini (1633–1698). Drawing of a fortified L-shape structural complex including: 1 – Lateran Basilica, 2 – Council Hall, 3 – Balcony of Boniface VIII, 4 – Lateran Palace, 5 – Holy Stairs, 6 – Statue of Marcus Aurelius. 1693 (Online 13.01.2018, source:**

[https://upload.wikimedia.org/wikipedia/commons/0/00/De\\_sacris\\_aedificiis\\_a\\_Costantino\\_Magno\\_constructis\\_synopsis\\_historica\\_pag\\_17\\_Tab\\_V.jpg](https://upload.wikimedia.org/wikipedia/commons/0/00/De_sacris_aedificiis_a_Costantino_Magno_constructis_synopsis_historica_pag_17_Tab_V.jpg)

**Figure 5. Artist Hans Bornemann (1410–1475). Painting of the first Archbishop of Hamburg-Bremen Anskar with a model of the cathedral on a panel in the Hamburg Cathedral. 1457 (Online 21.02.2024, source:**

[https://upload.wikimedia.org/wikipedia/commons/0/07/Bornemann%2C\\_Hans\\_-\\_Ansgar.jpg](https://upload.wikimedia.org/wikipedia/commons/0/07/Bornemann%2C_Hans_-_Ansgar.jpg)

In the West Slavic principality, the original town called Luibice became a capital, and it contained a castle and merchant house (burned down during the uprising of 1138) on the peninsula near a harbor at the Schwartau and the Trave rivers' confluence. West of Luibice, Bishop of Oldenburg in Holstein Vicelinus (1086–1154) founded the church (1127) with a transept and massive tower. It was an important building for a new Augustinian monastery (Latin: *novum monasterium*, Greco-Latin: *Neomonasterium*, German: *neues Kloster* or *neues Münster*) built as the first North Elbian monastery by 1136 in Neumünster (Low German: *Niemünster*, *Neemünster*). Holy Roman Emperor (1133–1137) Lothar III inspired by Vicelinus established the Segeberg Monastery (German: *Augustinerkloster Segeberg*; 1134–the second half of the 16<sup>th</sup> century) under the subjugation of the Archbishop of Hamburg-Bremen. A church and a monastery made near the Port of Bremen (German: *Bremerhaven*) were located at the foot of the newly built Siegesburg (also *Siegburg* or *Segeberger Schloss*). The church in Neumünster was used as a sample, and St. Mary's Church (1156) with a high tower was included in the complex. In 1143, Count of Schauenburg and Holstein (1130–1164) Adolf II who took over the strategically significant peninsula founded a German settlement of Lübeck on a hill island of Bucu or Buku by the Trave and Wakenitz Rivers. German merchants established the first German port for the active Baltic maritime trade at the estuary of the Wakenitz into the Trave. The fortified monastery (German: *Burgkloster*) of Lübeck was created atop the ruins of Bucu. Adolf II built a castle, existing already in 1147, and a suburb

developed nearby. The name *locus* of the former urban settlement in the central part of the peninsula corresponded with an archaeological account of the origin of the German settlement (*civitas*). In Medieval Latin texts, the word *civitas* had several meanings and referred to a district or district center of spiritual or secular government for some county. In 1150, the center of the Bishopric of Oldenburg was moved to the southern part of the peninsula. Fire destroyed the feudal overlord. The Saxon ruler Henry the Lion forced Adolf II to relinquish Lübeck and began to rebuild the town in 1159. This time is considered to be the traditional date of the founding of Lübeck. In 1160, Bishop of Oldenburg and Lübeck (1155–1163) Gerold moved the seat from Oldenburg to the southern part of Lübeck and founded the Canonical or Cathedral Chapter. In 1173, Henry the Lion founded the Bishopric of Lübeck and laid the foundation stone of the Lübeck Cathedral (German: *Dom zu Lübeck*, or colloquially *Lübecker Dom*; 1173–1230), one of the oldest buildings, which replaced a wooden church built in the city center in 1163, and Lübeck became the capital of the Bishopric of Lübeck, which gained the status of Imperial State (Latin: *Status Imperii*, German: *Reichsstand*). As a part of the Holy Roman Empire, it became the Prince-Bishopric of Lübeck (German: *Hochstift Lübeck*; 1180–1803). Lübeck became the main trading port between the East and West. Holy Roman Emperor (1155–1190) Friedrich I Barbarossa granted special privileges to Lübeck in 1188, as its trade on the Baltic grew in importance. Lübeck law (German: *Lübisches (Stadt) Recht*) was the second most prevalent form of medieval municipal law next to Magdeburg Rights (German: *Magdeburger Recht*), also called Magdeburg law (Ozola, 2023a).

In Schwerin enclosed by lakes, the Slavic Obotrites built a fort on an island in large Lake Schwerin, and the first records of it date from 973. A settlement of the Obotrites dated to the 11<sup>th</sup> century was in the middle part of these lakes. The fort became a target of Germanic noblemen who wanted to expand their territory eastward. Henry the Lion defeated the Obotrites in 1160 and captured Schwerin. German conquerors recognized the strategic and aesthetically interesting location of the island and started to build a new castle, which influenced the urban space. The foundation of the city of Schwerin took place in the same year. Schwerin became the bishopric center, and on 9 September 1171, the foundation stone for the cathedral was laid on the highest spot of the Old Town. The Schwerin Cathedral (German: *Schweriner Dom St. Marien und St. Johannis*) was built following the move there of the seat of the Bishopric of Abodrites established by Henry the Lion in the late 12<sup>th</sup> century. The basilica built instead of the first wooden cathedral was also a parish church (German: *Pfarrkirche*) for citizens who did not have their church.

In the 11<sup>th</sup> century, the Polabian Slavs founded a settlement at the Warnow River called Roztoc. The name *Roztoc* was derived from the Slavic *ras-tokŭ* /fork of a river/. After a fire in 1161, German traders settled the settlement of Rostock near the Warnow's estuary to the Mecklenburg Bay of the Baltic Sea. In the late

12<sup>th</sup> century, immigrants from various parts of the Holy Roman Empire came to Stettin and changed its Slavic character. This German-inhabited place was destroyed in 1189. The Danes manned a reconstructed fort in 1190 (Ozola 2023a).

On the Liv-inhabited River Rīga's right bank, the strongly fortified *domus episcopi* for the Bishop's seat was built in 1201, and the Bishopric of Riga (Latin: *Episcopatus Rigensis*; 1201–1255) was founded. The first Riga St. Mary's Cathedral (*ecclesia beate Marie*) was mentioned in 1206. Masonry structures created the L-shaped fortified perimeter construction complex for the most important Christian center in Livonia (Fig. 3) (Caune 1999, p. 219) named after the people living there. *Livonia* was the designation given by strangers in Latin, and *Livland* was in German. It would be *Līvzeme* in Latvian. Archaeological excavations (1930) indicated that originally the Riga Bishop's residence occupied the eastern part of the first fortified yard (1201–1215) of Bishop of Riga Albert (Latin: *Adalbertus Canonicus Rigensis*) and was located at the intersection of traffic roads near the harbor. The bishop's yard was included in the fortified semicircle area of the Old Town of Riga divided by streets into four quarters (Šīrants 1978, p. 420, 422). This early medieval town was formed in German and Italian building ways. Bishop Albert established the Bishopric of Livonia (Latin: *Episcopatus Livoniensis*, 1207–1255) included in the Holy Roman Empire and founded the Bishopric of Leal (Latin: *Episcopatus Lealensis*), or the Estonian Bishopric (Latin: *Episcopatus Estiensis* or *Episcopatus de Hestia*; 1211–1224) in the Estonian-inhabited Ridala Land (Latin: *Rotalia*). The bishop's residence (1220–1238) was built in the center of the Leal Bishopric.

Bishop Albert started to build the Riga Bishop's second fortified yard (1215–1234), which had masonry houses and a sacral building, and created the perimeter construction complex of an L-shaped layout that reminded the solution of the Roman Bishop's residence in Rome (Fig. 4). The Riga Bishop's first and second fortified yards were located on the outer boundary line of the strongly fortified town. The bishop's second yard surrounded by a defensive wall was separated from the Riga Canonical Chapter's building complex that included the second Riga Cathedral with the tower crowned by a slender, tall spire and a monastery. Both complexes alongside the Daugava were built simultaneously with Riga enlargement and formed two urban structures made up next to the new or second defensive wall that surrounded the New Town of Riga (Latin: *nova civitate Rige*), which was first mentioned in 1220, and continued the route of the oldest Riga Town Wall along the Rīga River and the Daugava. The cathedral, monastery, and the bishop's second yard influenced the formation of the street network and the placement of squares in urban space, and gates in the new Riga Town Wall. The first marketplace was built up, and a new square (later the Town Hall Square) was in the newly added part of the town, or the New Town (Latin: *civitas nova*) on the Daugava side. The first Town Hall was located next to the main entrance gate built into a new town wall. Bishop in 1221 recognized the rights of self-

government of Riga and after 1221 founded the Town Council. Riga in 1225 got town privileges from Visby, which received them in the early 13<sup>th</sup> century and became a city. Visby-Riga law or Gotland-Riga law (Latin: *iura Gottlandiae*) created following the example of Visby (Gotland) city law became the oldest version of Riga law (German: *Rigisches Recht*). German and medieval European requirements were adopted. On 5 April 1226, written sources mentioned St. Jacob's also St. James's Church (German: *Jakobskirche*, Latvian: *Sv. Jēkaba baznīca*) for the townspeople parish in the suburb of Riga outside the new town wall completed from 1226 to 1249. It surrounded the New Town (*Suburbium*) on the waterway and earth road crossings and for the important trade and crafts city of Riga created one of the most powerful defense systems on the Baltic coast.

The Livonian Brothers of the Sword in 1223–1224 destroyed the Estonian wooden *castrum Tharbatense* on Tarbata Hillfort, and Bishop of Riga Albert's brother, Abbot (until 1219) of Bremen St. Paul's Abbey, Bishop of Leal Hermann of Buxhövdén (German: *Hermann von Buxhövdén*; 1163–1248) founded the Bishopric of Dorpat (German: *Bistum Dorpat*; 1224–1558) and established *castrum Tarbatae* (1224–1279) on a strategically significant hill at the Emajegi River. In a separate area of Cathedral Hill (Estonian: *Toomemägi*), the freestanding Roman-Catholic Cathedral of the Apostles St. Peter and St. Paul (Estonian: *Tartu toomkirik*; German: *Dorpater Domkirche*; 1224–1279) as a basilica began to build in Dorpat (Latvian: *Tērbata*, Estonian: *Tartu*, Latin: *Tarbatum*, Russian: *Депнм*, since 1893 *Юрьев*) (Fig. 3). A moat demarcated the bishop's fortified yard from its west outer section and the cathedral with the Canonical Chapter's house. Two urban structures of a spiritual center arranged side by side were formed in the northwest part of Cathedral Hill, next to which a settlement developed at the floodplain. The oldest wooden church had already been in the settlement after 1224 at the foot of the hill, where several streets started from a circular street and directed eastwards perpendicular to the river flow. The defensive wall separated the bishop's fortified yard from the residential area divided into sections by streets. Trading took place on the most popular street. In 1234, the construction of stone walls around the settlement of a triangular area began. On 1 October 1228, Bishop of Riga Albert linked up the Leal Bishopric with the Wiek Vogtei and the conquered island of Saaremaa and formed the new autonomous Bishopric of Ösel-Wiek (Estonian: *Saare-Lääne piiskopkond*, *Saare-Lääne Diocese*, German: *Bistum Ösel-Wiek*, Latin: *Ecclesia Osiliensis*; 1228–1560) included in the Holy Roman Empire.

### **Planning and development of bishopric centers in the 13<sup>th</sup> and 14<sup>th</sup> centuries in subjugated Prussian-inhabited lands**

The Teutonic Order founded the State of the Teutonic Order (Latin: *Civitas Ordinis Theutonici*, German: *Staat des Deutschen Ordens*; 1230–1525), where

small settlements dominated urban landscapes (Kranz 2013). Several towns stood out in terms of not only their size but also their functions. The Teutonic Order's Master (German: *Deutschmeister des Deutschen Ordens* 1219–1230, *Landmeister von Preußen des Deutschen Ordens* 1229–1239) Hermann Balk, Bishop of Breslau (1232–1268) Thomas I known for Germanification of Silesia, building programs, and promoting church interests in secular politics and High Duke of Poland (1232–1238) Henry the Bearded, a grandson of Władysław II Wygnaniec who founded the Duchy of Silesia (Polish: *Księstwo śląskie*, German: *Herzogtum Schlesien*; 1138–1335), signed an agreement for the founding of new cities in the Teutonic Order's State (Jasiński 1993, 101–102). Following the traditions of the Roman Empire, financially independent castles started to be built for Vogtei and Commandry centers to strengthen the obtained properties. In every subjugated Prussian-inhabited region, a stone castle with a tower included in its structure was the main edifice. Until 1235, the Teutonic Order's regulations determined the placement of rooms to be included in the castle. In their protection, settlements formed and received German municipal concerns (German: *Deutsches Städtewesen*) or town law (German: *Deutsches Stadtrecht*). During the second half of the 13<sup>th</sup> century, irregular wooden and stone castles appeared instead of former Prussian forts. Settlers for the formation of governmental structures were displaced in Kulm (Polish: *Chełmno*, German: *Culm*) and Thorn (Polish: *Toruń*).

On the River Vistula's right bank at the estuary of the Drewenz River (Polish: *Drwęca*), the Thorn Fortress of stone was erected around 1230. Buildings were added to the inside edge of a ringwall (German: *Ringmauern*) built for a strongly fortified horseshoe-type castle instead of the former Prussian settlement on the right bank of the Vistula Waterway. On the stronghold's western side next to the river, the regularly planned Old Town of Thorn (Fig. 1, 2, 3) formed around a marketplace. It obtained Magdeburg law in 1233 and became the capital of the Teutonic Order's State during the construction of Marienburg Castle. Local weather conditions and relationships with the ruler determined an urban construction decision on the citadel's formation on the relief elevation in 1236 (Kranz 2013). The Cathedral Basilica of St. John the Baptist and St. John the Evangelist (Polish: *Bazylika katedralna Świętych Jana Chrzciciela i Jana Ewangelisty w Toruniu*; 1236–15<sup>th</sup> century) used for the townspeople Catholic Parish was built probably shortly after Thorn was relocated to its current location (1236) and was exploited for about 60–80 years. Outside the Old Town of Thorn towards the northwest, Franciscans established the first convent in 1239. In the mid-13<sup>th</sup> century, they built the Church of the Assumption of the Blessed Virgin Mary (Polish: *Kościół Wniebowzięcia Najświętszej Marii Panny w Toruniu*), which was part of a Franciscan monastery in the newly formed town. The first church from around the mid-13<sup>th</sup> century was a rectangular hall-like building. Old-Kulm Fortress (Polish: *Starogród*; 1232) was built instead of the destroyed Prussian marketplace. Dominicans in 1233 set up a monastery and started to build

St. Peter and St. Paul's Church (Polish: *kościół św. Piotra i św. Pawła w Chełmnie*). It was completed in the fourth quarter of the 13<sup>th</sup> century. The orthogonal planned Old Town of Kulm developed in a geographically different place from the current *Starogrod Chełmiński* was important for the trade between the Baltic and Southern Europe and between Eastern and Western Europe. Kulm (Fig. 2, 3) established in December 1233 became the capital city. The Teutonic Knights built a fortress (1232) like an oval tower of wood and clay on the island near the Vistula's right bank, where Prussian fortified Quedin Village (Prussian: *kweita*, Slavic: *kwiat* /flower/, from 1236 to 1945 German: *Tiefenau*, since 1945 Polish: *Tychnowy*) was located. An irregular square castle with three towers (1233) was made instead of the Pamedian wooden fortress of Kwedis by the estuary of the River Nogat's tributary of Liwa or Liva (German: *Liebe*). A settlement formed at the foothill. The garrison town of Marienwerder (Polish: *Kwidzyn*; town privileges in 1233) was established on the Vistula's right bank and named after the Virgin Mary. The heavily fortified bishop's residence was separated from the town. The first parish church with a rectangular altar space was built, and its side façade was turned towards the town. On 28 December 1233, Hermann Balk and Grandmaster (1210–1239) Hermann of Salza initiated a legal constitution for a municipal form of government in the monastic state of the Teutonic Knights. A wooden-earth fortress on the isthmus between two lakes was built by the initiative of Hermann Balk in 1234 (Milicers 2009, 96–97). The town of Rehden (now Polish: *Radzyń Chełmiński*; 1234) at the tributary of Gdania, a river presently known as Motława (German: *Mottlau*), was established to monitor traffic from Pomesania (Latin: *Terra Pomesania*, German: *Pomesanien*) (Fig. 2, 3) to Kulmland (Polish: *Ziemia Chełmińska*, German: *Kulmerland*, Latin: *Terra Culmensis*) (Fig. 2). The Knights made a guard post instead of Truso and in 1237 founded the town of Elbing (*Elwinge*, Polish: *Elbląg*, Latin: *Elbinga*, *Elbingum*) for the principal center in Pogesania (Polish: *Pogezania*, Lithuanian: *Pagudė*, German: *Pogesania*, Latin: *Pogesania*). Prussians immediately destroyed it. In Elbing, the basilica of St. Nicholas's Church (1240–1260; Polish: *kościół katedralny św. Mikołaja* since 25 March 1992) was used for religious and social events until the 14<sup>th</sup> century. A strongly fortified bishop's residence was separated from the town, and the Canonical Chapter's house was built for the bishopric's center at the Elbing's mouth. A Dominican monastery in the Old Town was made in the town wall's northwest corner. During seven years, five towns in German traditions were founded in the Teutonic Order's State (Jasiński, 1993, p. 97, 104).

In Courland (Livonian: *Kurāmō*, Latvian: *Kurzeme*, *Kursa*, Latin: *Curonia*, *Curlandia*, German: *Kurland*), which was not yet under the Crusaders' rule, the district in Dundaga belonged to the Bishopric of Riga, and the Bishopric of Courland (Latin: *Episcopatus Curoeniensis*; 1234–1583) was legally established in September 1234, and already around 1235, the claimants started distributing lands. The Cours were required to fulfill the concluded agreements and participate



in the journey of the second Master of the Livonian Brothers of the Sword (1209–1236) Volkwin of Naumburg through Žemaitija. On the way back, the troops of the Semigallians and Samogitians severely defeated the knights in the Battle of Saule on 22 September 1236. After the heavy defeat, the Livonian Swordbrothers were joined to the Teutonic Order, which already in 1235 had taken over properties and knights of the Dobrin Brothers of the Sword. On 12 May 1237, the Brotherhood of the German House of Saint Mary in Jerusalem in Livonia (Latin: *Fratres de Domo Sanctae Mariae Theutonicorum Jerusalemitana per Livoniam*) as an autonomous branch of the Teutonic Order for the subjugation of Baltic tribes was formed with the support of Roman Pope (1227–1241) Gregorius IX.

Since 1238, the Teutonic Order's activities in the conquest of Prussian-inhabited lands, and the foundation of towns become scarce. In Warmia, on the coast of the Prussian Spit (German: *Frische Nehrung*) opposite the entrance into the Vistula Lagoon, the Germans uncovered the port for Prussian ships' shelter and a fortified settlement *Wuntenowe* (Prussian: *undan, wundan*), from where the German name *Honed* or *Honeda* appeared. The Prussian settlement was conquered in 1239, and instead, the construction of the Teutonic Order's oldest wooden fortress of Balga /bellows/ (Lithuanian: *Balga*, Polish: *Balga*, Russian: *замок Бальга*, now in Kaliningrad Region) (Fig. 2) for the Teutonic Order's center and control of shipping traffic started on a high cliff separated by a river and marches (Milicers 2009, p. 175–176). Instead of the Prussian fortified settlement of *Brusbergue* at the Pasłęka ancient river, where the only Warmian seaport was on the side of the Vistula Lagoon, the Knights after 1240 built a square castle and established a center named Braunsberg (Latin: *Brunsb erga*, Old Prussian: *Brus*, Polish: *Braniewo*). On the site of the Prussian fort Lecbarg until being conquered by the Teutonic Knights in 1240, a fortress was built and Heilsberg (now Polish: *Lidzbark Warmiński*) was founded. In the village of Prussian fishermen, the bishopric center of Frauenburg (Polish: *Frombork*) was founded. There, the Canonical Chapter's house was placed and the first and main wooden church in the bishopric was built on top of the Cathedral Hill (Polish: *Wzgórza Katedralnego*). Lübeck whose commercial importance in seaborne trade became even greater signed a trade agreement with the city of Hamburg in 1241, and it can be considered the origin of the German Hansa. Medieval cities grew within the confines of walls. In Lübeck, St. Mary's Church (German: *Lübecker Marienkirche, St. Marien zu Lübeck*; between 1250 and 1350) at the highest point on the island became the market church and dwarfed the nearby cathedral consecrated in 1247. The city's foremost parish church close to the Town Hall at a marketplace was a symbol of the prosperity and power of the Hanseatic city and formed the Old Town. In Schwerin, the main center of the Prince-Bishopric of Schwerin, the Schwerin Cathedral was completed on 15 June 1248.

Papal Legate (1224–1251) Bishop Wilhelm of Modena with the participation of military force divided subjugated Prussian-inhabited lands into four dioceses.

In 1243, the Bishopric of Samland (German: *Bistum Samland*, Polish: *Diecezja sambijska*) (Fig. 3) was established on 4 July. The Bishopric of Kulm (Polish: *Diecezja chełmińska*, German: *Bistum Kulm*) and the Bishopric of Pomesania or Pamede (Polish: *Diecezja pomezkańska*, German: *Bistum Pomesanien*) were founded on 28 July. On the next day 29 July, the Bishopric of Warmia (Polish: *Diecezja warmińska*, Latin: *Dioecesis Varmiensis*, German: *Bistum Ermland*) (Fig. 3), which was bounded in the west by the Pasłęka River, in the northwest by the Vistula Lagoon, and in the south by the Pregola's left tributary of Alle (Polish: *Łyna*, Lithuanian: *Alna*, Russian: *Лавга*), was established. It stretched from the lagoon far away into the inland and as a wedge pushed in between the lands ruled by the Teutonic Order, separating the old tribal regions. Bishops retained secular rule over about one-third of the diocesan territory. The Prussians started the first revolt in 1243 (Milicers 2009, p. 98). In the important trade city of Riga (Fig. 3), which became the Teutonic Order's main military economic base and municipal center in Livonia, Vice Master (1240–1241, 1248–1253) Andreas of Felben, and bishops of Riga, Dorpat, and Osel-Wiek signed an agreement to found the Livonian Confederation (Latin: *Terra Mariana*; 1243–1561) on 1 October 1243. On 7 February 1245, Wilhelm of Modena admitted Courland on part of Prussia (Latin: *Curonia seu Curlandia, cum sit pars Pruscie*), and Roman Pope Honorius III confirmed this decision on 9 February 1245 (Sterns 2002, p. 367).

The Prussians finished revolts in 1245. The Peace Treaty of Christburg between pagan Prussian clans represented by a papal legate and the Teutonic Knights was signed on 2 February 1249 (Milicers 2009, p. 101). In Pomesania, the town of Marienverder became the center of the Pamede Bishopric. The second masonry fortress from 1242 to 1250 was erected on the western side of the church. Two stone castles simultaneously existed in the capital city of Marienwerder for more than a century. Heidenreich became a bishop at the end of 1245 and picked Losendorff, or Loosendorf (Polish: *Łoza*) as a place of his stay north of Stary Targ, which was located southeast of the settlement recorded as *urbs Gyddanyzc* in 997. In 1188, *Gdanzc* was granted town privileges. In 1251 (before 22 July), Bishop Heidenreich bestowed town privileges to Losendorff and renamed it Culmsee (German: *Kulmsee*, Polish: *Chełmża*), and the Canonical Chapter was domiciled there. On 22 July, the bishop founded a cathedral. It was built starting in 1254. In Warmia, Braunsberg Castle was used as a bishop's residence (1250–1340), and in 1251, Heilsberg came under the control of a bishop and was once the largest town and capital of Warmia. At the junction of the Alle and Pregola Rivers, the Knights built Wehlau Castle (German: *Wehlau*, Lithuanian: *Vėluva*, Polish: *Welawa*, now Russian: *Знаменск*) to guard against and be able to continue the colonization of the native Sudovians, Nadruvians, and Skalvians. On this site, originally was a castle of the Prussians, around which a settlement called *Velowe* (*Wilaw* (1326), *Wilouwe* (1405), *Welouwe*) arose, and it was mentioned in a

document in 1258. The name indicates a pagan cult site (Prussian: *wele* /soul, spirits of the deceased/ *welauks*, *welawa* /soul field, grave field, cemetery/).

After West Prussian tribes were forcibly colonized by the early 1250s, the Knights continued their advance north and east. The Pope and Grandmaster of the Teutonic Order (1253–1256) Poppo of Osterna began preaching a crusade against the Sambians of thickly-populated Sambia. The Grandmaster decided on the territorial division of Prussian lands and began to establish municipal structures. Authorized by the Grandmaster of the Teutonic Order in Livonia (1251–1254) Eberhard of Sayn turned to the conquest of lands that separated Prussia from Livonia. A settlement of Baltic tribes in the Lower Neman area is said to have existed as early as the 7<sup>th</sup> century. The lower reaches of the Neman River were named either *Mēmele* or *Mēmela* by Skalvians and local Curonian inhabitants. The Balts initially established a trading center for the storage of goods and annual fairs with the neighboring Germans. In 1252, the Knights and Roman Catholic crusaders from Lübeck founded a fort. Documents for its founding were signed by Eberhard of Sayn and Bishop of Courland (1251–1263) Heinrich of Lützelburg on 29 July 1252 and 1 August 1252. The Bishop of Courland and the Teutonic Order divided the subjugated Curonian-inhabited lands in 1253. During two months, *Castrum Memele* /Memel Castle/ or Memelburg was built on an island in the Dange River to prevent the Samogitians from assisting Sambians, and the Teutonic Order and Bishop of Courland dealt with each other on 8 February 1253. The document mentioned that the cathedral and the bishop's residence had to be built. St. John's Evangelist Church (German: *Johanniskirche*) may have been located in the outer section of the Memelburg fortress, which was used as a base for further campaigns along the Neman River and against Žemaitija (Latin: *Samogitia*, *Samogetia*, or *Samagitia*). Memelburg was garrisoned with troops of the Teutonic Order administered by Eberhard of Sayn. In 1255, the Sambians unsuccessfully besieged Memelburg, and they surrendered in 1259. Thanks to Landmeister of the Teutonic Order in Livonia (1257–1260) Burkhard of Hornhausen, on 27 July 1258, St. John's Evangelist Church became a parish church for German residents of a stone castle and town. In 1258, the cathedral and a parish church existed in Memel (now *Klaipėda* in Lithuania). It became the main center of the Bishopric of Courland with the cathedral and at least two parochial churches but the development of the castle became the dominant priority. According to different sources, Memel received Lübeck law in 1254 or 1258.

During a campaign lasting less than a month, Sambia was conquered in January 1255. The Knights destroyed the Sembian wooden fortress Twangste and founded Königsberg (Prussian: *Kunnegsgarbs*, Polish: *Krolewiec*, Lithuanian: *Karaliaučius*, from 1946 Russian: *Калининград*) /King's Mountain/ fortification on the Pregola's left bank for the waterway's surveillance. The oldest parish church dedicated to St. Nicholas was built on its southern side in 1264. The bishop's residence (until 1525) was founded in the Prussian fishing village of

Schonewik. At the estuary of the Germauer Mills River (Russian: *Приморская*, German: *Germauer Muhlenflies*) on the Baltic coast, a new castle (Latin: *Castrum Nostrum*, since 1326 *Castrum Vischhusen*) for the bishop was built up to 1266 on the north bank of the Vistula Lagoon. In 1268, this place was first mentioned as *apud castrum nostrum Schonewik*. Not far away, a settlement was made in 1266.

The Archbishopric of Riga (Latin: *archiepiscopeatus provincia Rigensis*; 1255–1562) or a church-state under the authority of the Roman Pope and the Holy Roman Emperor was founded, and Riga became its administrative center. The Archbishop of Riga elected by the Riga Cathedral chapter and confirmed by the Roman Pope was the secular ruler and spiritual head of the Archbishopric of Riga and also the Riga Bishop and the spiritual head of the dominions of the Livonian branch of the Teutonic Order, as the Knights did not have its bishop. The Archbishopric of Riga was a protectorate of the Monastic state of the Teutonic Knights (1243–1464). Two urban structures consisting of a perimeter construction of the bishop's yard and the Canonical Chapter's yard with buildings of the Dominican monastery adjoined close by the Riga Town Wall made the complex of the Riga Archbishopric Centre on flat relief. Pope (1254–1261) Alexander IV in his letter of 2 August 1255 mentioned a place at St. Jacob's Church, where a Cistercian monastery has to be established for citizens' unmarried daughters and widows' care. He mentioned the monastery's privileges and the *Regula Benedicti*, awarded to it. The formation of the monastery has to be related to 1 May 1257.

In the main sacred centers of the Archbishopric of Riga, urban space was created according to models of Western European urban planning. Architectural accents changed. The cathedral became the main dominant in newly founded cities of bishoprics subordinate to the Archbishopric of Riga. These cities were granted town privileges and allowed to develop trade relations and the economy and participate in the Hanseatic League stretched from the Baltic to the North Sea and inland (Ozola 2023c). In the Archbishopric of Riga, the first towns were Dorpat, Kokenhusen, and Hapsal. Dorpat achieved Riga law in 1262 and became the capital of the Bishopric of Dorpat with its own ruling Town Council subjected to Bishop. Bishop's Castle surrounded by the wall with the Dome Gate along with Cathedral Hill was distinguished from the rest of the plain by the moat. The building complex of two urban structures on Cathedral Hill included the cathedral and was connected to the Dorpat City Wall, included in the common defense system. A path at the gate of Bishop's yard led down to John's Street, where St. John's Church for the citizenship Catholic Parish was made of stone. Greater Market on the expanded street started from John's Street and was closed by the German Gate, behind which was a bridge across the river. The most important streets of the town-shield took to Jacob's Gate at the end of streets on the northwest side, the Russian and Monks' gates on the east side, and St. Andrew's Gate on the south side of the city wall directed towards the waterway. The Dorpat Cathedral, which spaces around the altar and nave, was created in 1299. The

Canonical Chapter's house on the highest spot of Cathedral Hill behind Bishop's Castle and its outer part separated from the urban building by a masonry defensive wall were completed in the late 15<sup>th</sup> century. Massive, tall twin towers on the west front façade of the cathedral became architectonic dominants of Dorpat.

On the Latgalian-inhabited hillfort of a triangular outline at the Daugava Waterway, *Castrum Kukonois* of two two-story dolomite blocks placed mutually at a narrow angle formed an early irregular layout double-block castle of the Bishop of Riga. Both residential blocks were included in the unified defense system created by a defensive wall of stone. In front of the castle, St. Paul's Church (around 1225?) for the townspeople Catholic Parish was built at the market. The convenient traffic in Riga and the nice surroundings determined the choice of Kokenhusen as a place of residence for the Riga Archbishop. On 13 July 1277, Archbishop of Riga (1273–1284) Johann I of Lune awarded Riga law to the castle settlement and determined the borders of Kokenhusen Town. He mentioned that the Kokenhusen Town Wall had been built. The road determined the longitudinal axis orientated from the *castrum* through the settlement towards the Land or Town Gate built in the north part of the town wall.

The bishop chose Hapsal as a new center of the Bishopric of Ösel-Wiek. The establishment of the castle for the bishop's residence on the south coast of Haapsalu Bay, where a settlement developed around a marketplace on the Baltic Seacoast plain, can be dated to the 1260s, when the town-creation attempts of the Bishopric of Ösel-Wiek had failed both in Leal and Old-Pernau. Hermann of Buxthoeven (1230–1285), Bishop of Ösel-Wiek consecrated on 20 August 1262, began to build a double-block castle for the bishop on Cathedral Hill surrounded by a curving street. A single-nave cult building built between 1263 and 1270 was included in the complex of a secular and spiritual power center. Natural features determined the location of structures, the position of the castle, and the earlier urban settlement. The castle on Cathedral Hill westwards from a marketplace promoted the development of the town-shield of Hapsal protected by natural water obstacles on the plain of the seacoast. The first construction stage of Hapsal Town occurred at the same time as the castle was made; and the authority figures, members of their defense, and builders lived on the future urban territory to the north outside of the building site of the castle. Bishop of Ösel-Wiek Hermann wrote the charter of Hapsal. It was the first written record of the cathedral dedicated to St. John the Evangelist. Initially, the castle consisted of the north block. Two curtains of the wall about eight meters high connected this block with the cathedral on the south side, and a small four-sided turret protruded in front of the western curtain. The town-shield protected the bishop's residence and the cathedral at the hill's highest point: a circular street was created at the hill foot. Streets divided the area into residential blocks. The cathedral of the bishop's castle (1260) was originally not incorporated into the united defensive system. Later, it was adapted for protection and could serve as a shelter. The Hapsal Cathedral as

the largest single-nave cult building in Nordic and Baltic countries was referred to in historical sources as St. John the Evangelist, and sometimes, St. John the Evangelist and St. John the Baptist. Hapsal achieved Riga law in 1279.

After the Battle of Durbe, which happened on 13 July 1260, the Curonian, Semigallian, Latgalian, and Prussian riots began. In Courland, the resistance of the population was overcome, and in 1261, the Bishopric of Courland acquired Aseboten fortification on a high Beida Hill populated by the Cours. Beida Hill on a peninsula was one of the centers in the Principality of Bandava. The navigable Tebra River facilitated traffic to the Port of Saka and reached the Baltic Sea. The Prussians destroyed Braunsberg in 1261 and continued the revolt until 1262. The term *Ermelandt* appeared from 1262 to 1299. In Balga, the construction (1270–1280) of a stone stronghold with a high tower in the middle of the yard began. Buildings arranged along the perimeter created an irregular hexagonal fortress, matching the relief. The uprising in Livonia and Prussia was suppressed in 1273 (Milicers 2009, p. 42), and the commodity exchange was renewed.

Dwellers from Lübeck in 1273 restored Braunsberg in a new place by the Paślęka River. Bishop of Warmia (1278–1300) Henricus I Fleming started to build the Old Town of Braunsberg fortified by a moat and defensive wall. There, he placed a fortified bishop's residence made from 1278 to 1284. A square gate tower provided entrance into the bishop's yard. Construction continued in the northwest of the yard. In 1278, Braunsberg became the capital of the Warmia Bishopric. Bishop Henricus I awarded them Lübeck law in 1284. In 1280, Henricus I moved his residence to Frauenburg, where a *castrum* was built from 1278 to 1284. The church on Cathedral Hill obtained the status of a cathedral (Latin: *Ecclesia Warmiensis*) in 1288. Churches dedicated to St. George and St. Anne were built in the 13<sup>th</sup> century, and the fortified ensemble of the cathedral (Polish: *zespół katedralny: Katedra Wniebowzięcia NMP i św Andrzeja Apostoła, Pałac biskupów warmińskich, Kanonie, Obwarowania obronne*) surrounded by a brick protective wall was created. The Town Hall was located at the marketplace. On its north side, St. Nicholas's Church (Polish: *kościół parafialny Św. Mikołaja*; before 1278–the 14<sup>th</sup> century) for the townspeople Catholic Parish was placed.

The four bishoprics of Prussia, including the Bishopric of Kulm, were put under the jurisdiction of the Archbishopric of Riga as metropolitan. On 2 April 1263, Dominicans arrived in the New Town of Thorn. They were brought to Thorn based on a privilege issued by the Grandmaster of the Teutonic Order (1256–1273) Anno of Sangershausen who received an area that was then outside the town, although bordering on town walls. Dominicans made a monastery, financially supported by the first Bishop of Kulm (1245–1263), a Dominican Heidenreich (Latin: *Heidenricus Culmensis*), and built St. Nicholas's Church (Polish: *kościół św. Mikołaja i klasztor dominikanów*; probably completed before 1285) on the border territory of both towns. When the New Town of Thorn was founded in 1264, Dominicans found themselves in its northwest corner. Thorn

was composed of three parts: the Old Town of a regular layout created in two stages of construction (Jasiński, 2008, p. 97) in the west, the New Town in the east, and the castle in the southeast (Ozola 2023b, p. 19). In Thorn, the number of inhabitants and economic potential increased. Separate privileges were awarded to the Old and New Towns of Thorn. Perceiving the potential of the new urban center and wanting to introduce some corrections in the original Kulm law (German: *Kulmer Recht*, Latin: *Jus Culmense vetus*, Polish: *Prawo chełmińskie*), the Knights granted a new one, which, among other provisions, extended the patrimony of the Old Town. Kulm law was a modification of Magdeburg law and expanded. The area of the town increased twofold, which proves, that it was a prosperous period. The northward expansion resulted in a more classic pattern with a central square surrounded by houses of irregular shape (Ozola 2023b, p. 12). In the Old Town, major buildings were the Old Town Hall, the Church of the Assumption of the Blessed Virgin Mary built by Franciscans, and the Cathedral Basilica of St. John the Baptist and St. John the Evangelist whose construction of the second, larger triple-nave, three-bay body began in the first decades of the 14<sup>th</sup> century. Then, the presbytery was created after the demolition of the first building. The appearance of the western part is unknown. It is assumed that a square tower adjacent to the western façade was on the extension of the central nave. Fire partly destroyed the cathedral. The next phase of construction was partly related to its reconstruction after the fire in 1351. The Most Holy Virgin Mary's Church (Polish: *kościół Wniebowzięcia Najświętszej Marii Panny*, 1270–1300) of a Franciscan monastery was made with a nave covered with a ridged roof and without the main tower, whereas with asymmetric hall and narrow windows. Three octagonal towers, out of which the middle one was bigger, supplemented the chancel's volume (Nawrocki, 1966). The second church probably was an asymmetrical single-nave building with an elongated chancel and a slightly wider nave. In the 14<sup>th</sup> century, the third church was built, and its shape is impossible to determine precisely. The presbytery was probably widened. The current, fourth church in the form of a triple-nave hall with a gallery in the northern aisle was built in the 3<sup>rd</sup> and 4<sup>th</sup> quarter of the 14<sup>th</sup> century.

Both communities obtained independence, and each of them created its own legal, individual urban constructional formation. On 13 August 1264, the New Town of Thorn was chartered according to the Kulm law. The New Town had a lower economic potential. The location northeast of the castle, preserving the central position of the ruler's seat relative to both towns and expanding the defense zone of both the castle and the town followed the vision of the founder. It was important to have a legal status identical to that of the Old Town. A regular arrangement with the main square and a modular pattern of streets and blocks might be enriched by pointing to spreading out of important structures on the town plan – moving the main square closer to the castle, locating the Dominican triple-nave St. Nicholas's Church (1334, destroyed in the mid-19<sup>th</sup> century) with a deep

chancel and a polygonal closing in the north-eastern corner of the town and St. James's Church erected in the first half of the 14<sup>th</sup> century as a parish church for residents of the New Town in the south-eastern corner, that was mirroring spatial relations between the main churches of the Old Town. In the New Town, the church and monastery were extended from 1350 to 1370, and the biggest church for the townspeople Catholic Parish was placed in a block by the main square and supplemented the complex in the New Town. The lack of direct access to the Vistula River, usually perceived as a constraint in the development of trade imposed by the Teutonic Order, also meant a north-side extension of the border with the castle compound and hence the deepening of spatial relations with Komtur's seat. The Teutonic Order was the founder of both communities of Thorn, and since it had created the New Town structures from scratch, it identified more strongly with it. Still in the stage of organization, the Old Town was not involved in the process of creating a new urban center. Disagreements between the two communities appeared soon (Kranz, 2013). On the marketplace, the main building was the broadcloth trading hall built according to the Flemish sample in Thorn. Later, it was rebuilt for the needs of the Town Hall, whose monumental edifice had a high prismatic tower. At the end of the Middle Ages, broadcloth halls were knocked down, leaving only the Town Hall (Ozola, 2023b, p. 19).

Riga in 1282 joined the Hanseatic League, and in Christian centers of the Riga Archbishopric, a functional, composition, and artistic concept of fortified urban space formed in the context of an evolution of sacral buildings and the cathedral building type in Europe. During the 13<sup>th</sup>–14<sup>th</sup> centuries, medieval urban agglomerations developed in towns of bishopric centers, and parochial churches as architectural dominantes created urban space in Riga and other Hanseatic cities. Dorpat became a Hanseatic city in the 1280s, and Kokenhusen joined the Hanseatic League as well. Thorn joined the Hanseatic League in the 14<sup>th</sup> century.

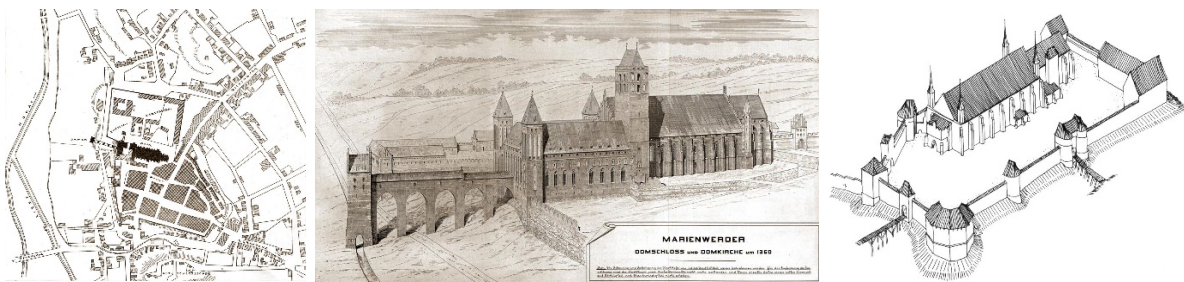
Curonian riots stopped, and Bishop of Courland (1263–1299) Edmund of Werde founded the Courland Canonical Chapter in January of 1290. In the document issued on 7 February 1290, Bishop presented half of Memel St. John's the Evangelist Church to the new Canonical Chapter. Memel was colonized by settlers from Holstein, Lübeck, and Dortmund, and a settlement at the market on the Dange's left bank obtained an unofficial name *Neu Dortmund* /New Dortmund/. Two centers in the Bishopric of Courland were established under the Archbishopric of Riga. Around 1290, Hasenpot St. John's Evangelist Church was built in the hillfort's southwest part. A sacral building included in the perimetral construction around the courtyard was built in the fortified complex of the bishopric center. A fortified building complex conformed to the surface of relief was created in the placement chosen for the Courland Canonical Chapter's house on the right bank of the border river Tebra. A ringwall whose southwards and eastwards sides were straight and northwards probably created a curved or broken line surrounding the Canonical Chapter's masonry house recorded in the



document on 8 September 1338 and built, supposedly, at the east end of the church. Merchants, using the harbor at the River Saka's estuary, took their goods in barges to Hasenpot (Latvian: *Aizpute*), the capital of the Bishopric of Courland, established as a town-shield of the two-stage building structure of the triangular layout. The trade center developed in the early 14<sup>th</sup> century. Economic activities promoted the formation of *oppidum* or *suburbium* and four streets at the castle mound's foothill. On 17 March 1378, it was awarded Riga law, and borders for *civitas* were determined. Each part of Hasenpot had a different defense system. The bishop chose the placement of his residence in Pilten on the Winda's right bank near the Port of Winda. The wooden castle of the Courland Bishopric's political, economic, and cultural center got under the Teutonic Order's control and was replaced by a regular stone castle (before 1309). Volumes organized around the courtyard were included in the trace of the defensive wall. An outer part of the castle took up the biggest part of a strong fortified area. The time of the first building of the church is unknown. The castle with its outer part and the town, where merchants and craftsmen surrounded their houses by palisades, made two separate parts of the triangular fortified building complex. Each of them had its defense system. On 20 June 1557, the last Bishop of Courland (1540–1560) Johannes IV of Münchhausen once again confirmed Riga law for Pilten.

In the Bishopric of Pamede, the Marienwerder Cathedral (1264–1284) was built in place of the previous church close to the second stone fortress. A complex of buildings created in several stages of construction included St. John's the Evangelist's Cathedral (Polish: *katedra św. Jana Ewangelisty*; 1284–the 2<sup>nd</sup> half of the 14<sup>th</sup> century) and separated the outer section from the town. In 1285, the Pamede Canonical Chapter was established, the first parish church in Marienwerder was raised to the rank of cathedral, and Marienwerder became the capital of the Bishopric of Pamede. St. John's the Evangelist's Cathedral of brick on a steep hill was started around 1325 (Fig. 6) as the cathedral of the Bishopric of Pamede and the parish church. The building's five-nave hall adjoined the west end close to the square castle (1322–1347) with the courtyard, strengthening the defense of the Capitular Castle. Stellar vaults covered the cathedral's 21-meter-high middle nave and two-story altarpiece (around 1335/1340) in the apse. The construction was completed in the second half of the 14<sup>th</sup> century. From the beginning, the cathedral was one complex of buildings combined with the fortified Canonical Chapter house. After 1343, the previous sacral building was pulled down and the structure of the nave came to join the chancel with the castle's eastern wall. The castle was built first and only then the cathedral, starting from the chancel. The Marienwerder Cathedral (German: *Domkirche von Marienwerder*; 1343–1384) performed defensive functions. It represents part of the Marienwerder castle complex and took the place of the parish church that was previously here. Its construction was completed during the term of the Bishop of Pamede Johannes I Mönch. Two massive octagonal stair towers were built on the

sanctuary at the east end. A belfry for the neighborhood observation was erected in the southwest corner at the interconnection with the castle. The cathedral's tower was built next to it. Quite possibly, it was used for observation. The tower in the western part of the cathedral was shared by the Capitular Castle, and it provided a magnificent view of the city and the Vistula River's Valley. This defensive structure with about three meters thick walls overlooks two other towers in Neuenburg (Polish: *Nowe*) and Mewe (Polish: *Gniew*) on the left bank of the Vistula River. The tower for a well was built on the castle's northeast side. The cathedral was finished in the 1360s (Fig. 7). The last stage of the construction was completed in about 1385, and the defensive gallery ran around the full wall of the temple. Walkways along the tops of the walls for shooters, covered with a common roof, and two defensive towers, connecting the chancel to the cathedral naves accentuated the defensive character of the cathedral. Narrow windows were pointed with stained glass inside. The steep gable roof was red-tiled. The construction as a whole was reinforced with huge buttresses in between the windows. There were three entrances to the cathedral.



**Figure 6 Planning of the Marienwerder building complex in urban space (Heise 1898, 38)**

**Figure 7 Reconstruction of the Marienwerder complex around 1360. 1898 (Heise 1898)**

**Figure 8 Architect, historian of architecture and urban planning Prof. Dr. Hab. Tadeusz Zagrodzki (1911–2007). Reconstruction of the building ensemble of the Frauenburg Cathedral (1329–1388) (Kajzer, Kołodziejki, Salm 2002)**

Bishop of Samland (1295–1318) Siegfried of Reinstein (*Siegfried von Reinstein*) founded *Wiskiauten* or *Vyschuzin* (Russian: *Моховое*, Lithuanian: *Viskiautai*) for his residence (until 1525) at the River Gaudka's (?) (Russian: *Приморская*) mouth on the northern shore of the lagoon. In 1299, the bishop commissioned some locators to find a town next to the castle with settlers from Stralsund. On 14 September 1305, Fischhausen was awarded town privileges. A church (1305–1315) was built for the Teutonic Order. Later, a parish church (German: *Pfarrkirche Fischhausen*; 1320–1350) was made as well. In 1326, the name *Castrum Vischhusen* appeared for the castle. In the next few years, the town also bore the name *Schönewick* but the name soon changed. Around 1320, it was commonly called *Bischoveshusen* /bishop's dwelling/ until 1436. After 1436, the town's previous name *Bischoveshusen* evolved into *Fischhaußsen* (after 1474),

and gradually evolved into the place name *Vischhausen* (after 1540), *Vichhausen* (after 1590), and *Fischhausen* (until 1946, Polish: *Rybaki*, Russian: *Приморск*, Lithuanian: *Žuvininkai*). On 13 September 1333, the three-nave Königsberg Cathedral (German: *Königsberger Dom*; 1333–1380) began to be built in Sambia.

Bishop of Warmia (1301–1326) Eberhard of Neisse awarded Frauenburg Lübeck law, which already had a lot of Hansa cities, and Frauenburg became the capital city of Warmia (Ermland). On Cathedral Hill, Bishop of Warmia (1329–1334) Henryk II Wogenap started to erect from the east westwards the 97-meter-long freestanding three-nave Archcathedral Basilica of the Assumption of the Blessed Virgin Mary and Saint Andrew (Polish: *bazylika archikatedralna Wniebowzięcia Najświętszej Maryi Panny i Św. Andrzeja Apostoła*; 1329–1388) (Fig. 8) of the rectangular layout, which was meant also for defense functions. In 1388, Bishop of Warmia (1373–1401) Henryk III Sorbom completed the construction of the cathedral connected in two places with building structures arranged around the perimeter. In the south and west of them, a big yard surrounded by cloisters was located. Bishop's residence (around 1350) and the Canonical Chapter's house were included in the building complex placed in the Cathedral Hill's east part. The belfry (Polish: *wieża Radziejowskiego*; mid-14<sup>th</sup> century), Copernicus Tower (Polish: *wieża Kopernikowska*; 14<sup>th</sup> century), and an octagonal bastion with the Big Tower (1448) were included in the northwest part of defensive walls built in the 1430s. In 1466, Braunsberg was incorporated into the Teutonic Order's State. In 1992, The Bishopric of Warmia was elevated to the Archdiocese of Warmia (Latin: *Archidioecesis Varmiensis*).

## Conclusions

1. In the newly founded bishoprics in the Prussian lands, a separate town for the establishment of centers instead of two urban structures intended for the Bishop's residence and the fortified Canonical Chapter house was founded. A new concept of urban development and the visual image of the Christian center developed.
2. In bishoprics founded under the leadership of the Bishop of Riga, Christian centers were created in strategically advantageous places near traffic ways. Residences of the bishop and the Canonical Chapter built on the relief elevation were protected by a town founded at the foot of the hill and served as a shield. The two closely placed urban structures determined the arrangement of streets and squares in the town. In the Prussian lands, Christian centers were founded in strategically convenient places instead of the local people villages near the Vistula Waterway and on the Baltic coast. The geographical situation, the coastal relief, and the traditions of regularly planned towns founded by the Teutonic Order determined the protection measures for living places of the bishop and the Canonical Chapter. The

construction volume and location of a compact planned castle and the cathedral included in the fortified perimeter construction complex were adapted to the needs of defense.

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# MĀKSLAS GRĀMATAS MŪSDIENU KULTŪRTELPA

## *Art Books in Contemporary Cultural Space*

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**Abstract.** *A study on art books is necessary to understand their role in contemporary cultural spaces and how to create a great book on art that contributes to enriching cultural landscapes. The article highlights the relevance of printed books in today's context, focusing on art themes, emphasizing the significance of art literature in the digital age, pointing out its ability to offer a deeper engagement with art phenomena. The aim of the article is to explore the types of art books and their significance in contemporary cultural spaces. Research methods include theoretical approaches involving the exploration, compilation, and analysis of relevant scientific and professional literature and sources. A survey, conducted through structured interviews, involved questioning cultural and art experts about the significance of art books in today's cultural spaces. The results of the study demonstrate that the relevance of books, including art books, will persist; their publication in print format will not disappear as art books possess added value created by the physical, tangible format of the book, its design elements, material properties, and diverse culturally significant content.*

**Keywords:** *art book, book content, culture, structured interview.*

### Ievads

#### *Introduction*

Lai gan mākslas grāmatas uzskatāmas par nišas produktiem, par tām interesējas un lasa salīdzinoši neliels skaits cilvēku, tās nezaudē aktualitāti jau daudzus gadus, gluži pretēji – arvien vairāk mākslas galerijas un muzeji ir sākuši izdot mākslas grāmatas un albumus par māksliniekiem, mākslas žanriem un kustībām mākslā. Jo īpaši šajā, digitālajā laikmetā, monogrāfija ir stabila vērtība jebkura mākslinieka atpazīstamībai, un tās pamatnosacījums ir "publicē vai ej bojā" (Nedo, 2016).

Kur slēpjas mākslas grāmatu stabilās popularitātes fenomens? Kas ir laba grāmata par mākslu un kā to radīt? Pētījums par mākslas grāmatām nepieciešams, lai noskaidrotu, kāda ir to loma mūsdienu kultūrtelpā un kā radīt labu grāmatu par mākslu, kas dos ieguldījumu kultūrtelpas bagātināšanā.

Mākslas tirgus ir atvērts grāmatām. Tās palīdz vēl vairāk izpludināt jau tā trauslo robežu starp komerciālo un nekomerciālo jeb simbolisko vērtību radīšanas aspektu. Ekonomiskais aspekts, kas raksturo mākslas grāmatu, ir tikpat pretrunīgs kā tās pastāvēšanas jēga. Izņemot populāru izstāžu katalogus, mākslas grāmatas

gandrīz nesniedz peļņu. No otras puses, mākslas grāmatu nozare ir paraugs sociālā, ekonomiskā, kultūras un simboliskā kapitāla veidiem, kurus identificējis franču sociologs un kultūras teorētiķis Pjērs Burdjē (*Pierre Bourdieu*), atklājot, ka ar grāmatām saistītā lielo galeriju darbība ir ilgtspējīga uzņēmējdarbības prakse (Ramsey, 2023). Vācu mākslas un kultūras žurnālists Kito Nedo (Nedo, 2016) secina, ka mūsdienās mākslas tirgus mīl grāmatas galvenokārt to neizprotamības dēļ – tās ir vitāli svarīgas un reizē nelietderīgas, un tās turpina uzturēt tirgu ar savu paradoksāli neizdevīgo ekonomiku.

Raksta mērķis – izpētīt mākslas grāmatu veidus un to nozīmīgumu mūsdienu kultūrtelpā, kas ir priekšizpētes posms autores Gitas Līpenītes-Čudarānes iecerei izstrādāt biogrāfiskas mākslas grāmatas saturu un grafikas dizainu par mākslinieka Modesta Līpenīša radošo darbību.

Pētījuma metodes: teorētiskās - izpētīt, apkopot un analizēt tematam atbilstošu zinātnisko un profesionālo literatūru un avotus; empīriskā - veikt intervijas ar kultūras un mākslas jomas ekspertiem.

### **Mākslas grāmatu veidi** *Types of art books*

Mākslas grāmatu saturisko daudzveidību ir analizējuši vairāki pētnieki. Nozīmīgāko apkopojumu ir veicis Barijs Fokss (Fox, 2022), kurš skata mākslas grāmatu strukturēšanas un rakstīšanas pieejas, kas apkopotas 1.tabulā.

*1. tabula. Mākslas grāmatu veidi (pēc Fox, 2022)*  
*Table 1 Types of art books (adapted from Fox, 2022)*

Saturiskā pieeja	Galvenās iezīmes	Piemēri
Standarta biogrāfija	Galvenokārt tekstuālas, ir arī dažas fotogrāfijas un mākslinieka darbu attēli	<i>Franny Moyle “The King’s Painter: The Life of Hans Holbein”</i>
Dzīve un darbi	Mazāk teksta un vairāk attēlu	<i>Susie Hodge “Monet: His Life and Works in 500 Images”, Patricija Olmera “Tas ir Magrits”.</i>
Meistardarba radīšana	Saturs koncentrējas uz vienu mākslas darbu	<i>Ross King “Michelangelo and the Pope’s Ceiling”</i>
Kā mākslinieks izmainīja mākslas pasauli	Mākslinieka ietekme ārpus mākslinieku kopienas	<i>Christopher Brown “The Dali Legacy: How an Eccentric Genius Changed the Art World and Created a Lasting Legacy”, enciklopēdija “Art That Changed the World”</i>
Mīrkļis laikā	Īpašs periods mākslinieka dzīvē	<i>Bernadette Murphy “Van Gogh’s Ear”</i>
Mākslinieku savstarpējā ietekme	Mākslinieku grupu (piem., impresionistu) apskats	<i>Steven Naifeh “Van Gogh and the Artists He Loved”</i>

Konkurējošu mākslinieku attiecības	Konkurences ietekme uz daiļrades attīstību	<i>Sebastian Smees "The Art of Rivalry"</i>
Mākslinieka un mecenāta attiecības	Ietekmīga cilvēka loma mākslinieka daiļradē	<i>Loyd Grossman "An Elephant in Rome"</i>
Mākslinieki un viņu laikmets	Personīgo, vietējo vai globālo apstākļu ietekme	<i>Paul Staiti "Of Arms and Artists: The American Revolution through Painters' Eyes"</i> .
Mākslas žanra vai žanru izpēte	Mākslas darbu stilu, satura, datējuma un ievērojamo pārstāvju raksturojums	Dace Lambergas "Klasiskais modernisms", <i>Michael Wood, Bruce Cole and Adelheid Gealt "Art of the Western World"</i>
Meistardarbu izpēte	Spilgtu mākslas paraugu apskats	Kristiāne Štukenbroka, Barbara Tepere "1000 šedevru Eiropas glezniecībā 1300 – 1850"; <i>Andy Pankhurst and Lucinda Hawksley "When Art Really Works"</i>
Māksla kā vēsture	Stāsti par ievērojamiem mākslas darbiem	<i>Cynthia Saltzman "Old Masters, New World: America's Raid on Europe's Great Pictures"</i> .
Novelizēts stāsts par mākslinieku	Aizraujošs un izzinošs romāns par mākslinieka dzīves aizkulisēm	Viljams Somersets Moems "Mēness un penijs", Treisija Ševaljē "Meitene ar pērļu auskaru"

Papildinot B. Foksa minētos mākslas grāmatu veidus, jāatzīmē, ka mākslas grāmatu tapšanā var tikt izmantota arī žurnālistiska pieeja, piemēram, kultūras socioloģe un angļu rakstniece Sāra Torntone (*Sarah Thornton*) sarakstījusi grāmatu "Septiņas dienas mākslas pasaulē". Grāmatas septiņas nodaļas ieskatās pa vienai dienai atšķirīgās mākslas norisēs (Markus, 2020).

Viens no mākslas grāmatu veidiem ir dienasgrāmata. Mākslinieki raksta dienasgrāmatas, piezīmes, pārdomas, vēstules draugiem un ģimenes locekļiem. Pēc mākslinieka nāves šos materiālus var izmantot mākslinieka biogrāfijas veidošanā vai publicēt kā grāmatas, piemēram, "The Letters of Vincent van Gogh" ar pasaulslavenā postimpresionista Vinsenta van Goga vēstulju saraksti ar viņa brāli Teo (Markus, 2020).

Māksliniece Kristīne Markus (2020) norāda, ka mākslinieki mēdz rakstīt autobiogrāfijas. Viens no ekscentriskākajiem māksliniekiem, spāņu mākslinieks Salvadors Dalī 1942. gadā uzrakstījis autobiogrāfiju "La vie secrète de Salvador Dali" (tulk. no franču valodas – 'Salvadora Dalī slepenā dzīve').

Autobiogrāfija vai biogrāfija ne tikai sniedz ieskatu izcilu personību reālajā dzīvē, bet arī motivē lasītāju īstenot savus mērķus (Malaba, 2022).

Iepriekš minētais mākslas grāmatu veidu apskats apliecina mākslas kultūrvēsturisko vērtību saglabāšanas iespējas daudzveidīgās izpausmēs gan kā konkrēta mākslinieka devumu un ietekmi sabiedrībā, gan mākslas žanra izpausmes, gan vēstures konteksta interpretāciju.

## **Metodoloģija** *Methodology*

Ar mērķi noskaidrot ekspertu skatījumu par mākslas grāmatu nozīmi mūsdienu kultūrtelpā, tika veikta aptauja ar strukturētas intervijas palīdzību.

Ekspertu aptaujā par respondentiem tika izvēlēti eksperti, kas ir konkrētas jomas speciālisti, kuri novērtē parādību vai procesu, lai atklātu un novērtētu pētāmās problēmas daudzveidīgos aspektus.

Strukturētā intervijā tiek izmantoti speciāli sagatavoti jautājumi, cerot saņemt konkrētas atbildes (Kristapsons, 2014, 265.lpp.). Šādi jautājumi parasti tiek iegūti, balstoties uz jau esošām noteiktas jomas teorijām, vai arī no iepriekšējo vai pilotāžas pētījumu rezultātiem, vai no pētnieka nojautas vai intuīcijas, vai arī vienkārši tie ir saistīti ar pētnieka noteiktām interesēm kādā jomā (Kropļiņš, & Raščevska, 2004).

2023. gada martā rakstiski tika intervētas trīs mākslas un kultūras jomu ekspertes – kultūras žurnāliste, Kultūras un izklaides izdevuma “KDi” redaktore Undīne Adamaite, mākslas zinātniece un kritiķe, Latvijas Mākslas akadēmijas (LMA) docente Aiga Dzalbe un mākslas zinātniece, LMA Informācijas centra vadītāja Ingrīda Burāne. Intervijas anketā tika iekļauti pieci atvērtā tipa jautājumi. Anketas ekspertēm tika nosūtītas uz personiskajiem e-pastiem un atbildes tika saņemtas elektroniski. Paredzamais atbilžu sniegšanas ilgums – 20 minūtes.

## **Pētījuma rezultāti** *Results*

Apkopojot atbildes uz pirmo jautājumu “Vai uzskatāt, ka mūsdienās ir vērts, un, ja ir, tad kā raksturotu šo vērtību, sastādīt grāmatas par mākslu un izdot tās drukātā formātā?” visas trīs ekspertes atbild apstiprinoši, norādot, ka drukāta formāta mākslas izdevumi ir bijusi vērtība visos laikos, bet mūsdienās tiem ir jo īpaša loma, jo skaidri norādīta darba autorība, nopietna materiāla atlase, vispusīgi pētījumi un rūpīga rediģēšana padara drukātos mākslas izdevumus par uzticamāko avotu, ja ir mērķis padziļināti un sazaroti iepazīt kādu mākslinieku, mākslas stilu vai citu tēmu mākslā. A. Dzalbe norāda, ka grāmata turklāt nav fragmentāra informācijas nodošana, kas raksturīgi interneta resursiem, bet tā veido savu veselumu un ideālā gadījumā pati ir mākslas darbs. Papildus vērtību drukātam izdevumam piešķir veiksmīgs dizains, izvēlēta papīra taktiļās īpašības un citas materiāla un formas kvalitātes.

Otrajā jautājumā tika noskaidrots ekspertu viedoklis par populārāko mākslas grāmatu žanru Latvijā. U. Adamaite un I. Burāne ir vienprātīgi, ka Latvijā vispopulārākais mākslas grāmatu žanrs ir mākslinieku biogrāfijas, savukārt mākslas zinātniece A. Dzalbe uzskata, ka reprodukcijām bagātas grāmatas (mākslas albumi) ar trāpīgiem komentāriem par mākslas stiliem ir saistošākais



mākslas grāmatu veidols. U. Adamaite piebilst, ka mākslas albumi bieži tiek izmantoti reprezentācijas pasākumiem kā vērtīga, saturīga un eleganta dāvana. Par mākslinieku biogrāfijām U. Adamaite raksta: “Latvijā lasītāju mīlestībai pret mākslinieku biogrāfijām ir senākas tradīcijas. Milzu loma šī žanra uzplaukšanā ir bijusi tautā tik iemīļotajai teātra zinātniecei, dēvētai par teātra rakstnieci, Lilijai Dzenei (1929.-2010.), kura aktieru portretu žanru savās grāmatās noslīpēja līdz augstai, šodien īsti neatkārtotai meistarībai.”

Uz jautājumu, vai mākslas grāmatas bagātina valsts, tautas kultūras mantojumu, saņemtas apstiprinošas atbildes. A. Dzalbe piemetina, ka to apliecina fakts, ka mākslas izdevumus izmanto reprezentācijas vajadzībām oficiālos pasākumos. U. Adamaite uzsver, ka mākslas grāmatas glabā tautas atmiņu un daudzi mākslas izdevumi, portretējot konkrētus mākslniekus, iemūžinājuši nācijas dzimšanas stāstu, bieži mākslas grāmatas sniedz vērtīgu pienesumu vēstures pētniecībā. Pēc Latvijas neatkarības atjaunošanas, pētniekiem arvien vairāk studējot ārvalstu bibliotēkās, ir radusies iespēja pārvērtēt mākslniekus pasaules mākslas virzienu mijiedarbībā un kontekstā.

Nākamā jautājuma atbildes liecina, ka kvalitatīvi uzrakstīta mākslnieka biogrāfija ir izglītojoša. Iepazīstot biogrāfiju, lasītājs var labāk izprast mākslnieka darbus, to nozīmi, un šis žanrs palīdz lasītājam identificēties, just līdzī dzīves notikumiem, kas savukārt notur lasītāja uzmanību, uzskata A. Dzalbe. U. Adamaite norāda, ka mākslnieka biogrāfiju tomēr nevar uztvert kā mācību grāmatu, kur rakstītais ir pilnīga patiesība, uzsverot, ka svarīgs ir konkrētās biogrāfijas autors, viņa profesionālais prestižs un kompetence. Kā ticamākās U. Adamaite izceļ biogrāfijas, kurās bagātīgi izmantoti mākslnieka citāti – dienasgrāmatu fragmenti vai vēstules. Eksperte secina, ka jebkurš autors neizbēgami izdara savu interpretāciju, atlasot materiālus, sastādot saturu un saliekot savus intonatīvos akcentus. I. Burāne piekrīt, ka ir jāvērtē konkrēts darbs, mākslnieka un rakstnieka personības, mākslniecisko vērtību, iespieddarba koptēls u.c. faktori, tomēr atzīst, ka jebkura grāmata savā ziņā ir izglītojoša.

Noslēdzot interviju, autore noskaidro ekspertu domas par to, kāda ir laba mākslnieka biogrāfija. I. Burāne un U. Adamaite uzsver, ka kvalitatīva mākslas grāmata ir radniecīga pašas mākslas būtībai ar savu vēstījumu, mākslniecisko tēlu, kvalitatīviem materiāliem un iespiedumu. U. Adamaite piebilst, ka šādu grāmatu raksturo nevainojama formas un satura saskaņa – taktīlais kontakts ar grāmatu, reflektējot par mākslas parādībām, ir ar savu noteiktu virsvērtību, kā arī tai jābūt uzrakstītai literāri saistošā valodā, kas iepazīstina lasītāju ar visaptverošu informāciju par pētāmo subjektu. Kā izcilu piemēru U. Adamaite min I. Strukas monogrāfiju par Anšlavu Eglīti “Par skaisto un aplamo dzīvi”, norādot, ka šajā izdevumā arī harmoniski saplūst pētnieciskā objektivitāte un autora subjektīvisms. A. Dzalbe uzskata, ka grāmatā jābūt atklātam mākslnieka dzīvesstāstam, radošajai darbībai un laikmeta kontekstam. Labā biogrāfijā portretēts laika gars, dzīve, kas veido personību. Labai biogrāfijai ir jābūt talantīgi

uzrakstītai, rūpīgi rediģētai, jābalstās nopietnā pētniecībā, drošos avotos, norādot precīzus notikumu un darbu datējumus.

Iepriekš minētais ļauj secināt, ka mākslas grāmatas sniedz vērtīgu ieguldījumu kultūrizglītības veicināšanā, kultūrvēstures vērtību saglabāšanā un nodošanā nākamajām paaudzēm, kā arī vērtīgu pienesumu vēstures pētniecībā. Mākslas grāmatu izdošanai drukātā formātā mūsdienu informācijas nepastāvības laikmetā ir īpaša loma. Laba mākslas grāmata ir tāda, kas pati par sevi ir mākslas darbs. Populārākā pieeja mākslas grāmatu rakstīšanā Latvijā ir mākslinieku biogrāfijas.

### **Diskusija** **Discussion**

Viena no pētījumā iesaistītajām ekspertēm kultūras žurnāliste Undīne Adamaite pauž viedokli, ka augstāko meistarību mākslas grāmatu izdošanā Latvijā ir sasniegusi izdevniecība “Neptuns”. Tādēļ, analizējot mākslas grāmatu aktualitāti Latvijā, svarīgi pievērst uzmanību izdevniecības “Neptuns” galvenās redaktore Laimas Slavas viedoklim, kuru viņa pauž vairākās intervijās un publikācijās.

Mākslas zinātniece, izdevniecības “Neptuns” galvenā redaktore Laima Slava 2017. g. intervijā LV portālam uzsver: “Grāmata ir mūžīga vērtība, pie tās nevar neatgriezties,” kā arī norāda, ka pēdējos gados “Neptuns” izdoto mākslas grāmatu lasītāju loks aug (Luksa, 2017). 2021. g. vasarā sarunā ar Justīni Verneru, L. Slava, atbildot uz jautājumu “Kāpēc vispār cilvēkiem ir svarīgi lasīt?”, pauž viedokli, ka grāmata iedarbina jebkura cilvēka personisko iztēli. Cilvēks, kurš lasa un iepazīst kultūru, dzīvo laimīgāku dzīvi, jo viņam vienmēr ir atbalsts plašākā dzīves redzējumā, ko dod grāmatas. Tas palīdz risināt savu ikdienu veiksmīgāk, jo kultūra ir viena no iespējām kā uz pasauli paraudzīties plašāk un iepazīt citu cilvēku pieredzi (Venera, 2021). Grāmatas var uztvert kā citu cilvēku atstātas instrukcijas un ceļvežus dzīvei, tās dod iespēju satīties ar citiem cilvēkiem, kurus citādi nesatīktu. Kā mākslas grāmatu primārās funkcijas L. Slava nosauc nepieciešamību informēt un atstāt liecību, jo cilvēki nekad neredzēs visus muzeju fondus, muzejus un mākslas pieminekļus, tomēr ir svarīgi zināt, kas kādai sabiedrības daļai, kopienai pieder – kādi mākslinieki ir pasaulē, kādi ir tieši šai kopienai, par ko viņi domājuši un runājuši. Un nākamais solis ir cilvēku iedvesmošana no pasaules kultūras mantojuma, motivēšana rīkoties pašiem, izpaust savu radošumu (Venera, 2021). Ne mazāk svarīga ir mākslas grāmatas kā mākslas objekta funkcija, atzīst L. Slava 2014. gada sarunā ar rakstu krājuma kultūrai un brīvai domai “Jaunā Gaita” žurnālisti Daci Kreceri: “Grāmatai jābūt kaut kam īstam, mākslas darbam pašam par sevi (..)” (Krecere, 2014). Līdzīgu viedokli par mākslas grāmatu kā mākslas darbu pauž aptaujātās mākslas un kultūras jomas ekspertes.

Sarunā ar J. Verneru (2021) Laima Slava dalās pārdomās par jautājumu, kādēļ drukāta grāmata ir labāka par digitāli lasāmu, un nonāk pie secinājuma, ka tieši ar to, ka grāmatu var šķirstīt un lasīt, tas ir kaut kas reāls, taustāms un sajūtams. Šis viedoklis saskan ar kultūras jomas ekspertes Undīnes Adamaites teikto, ka taktīlajam kontaktam ar grāmatu ir sava virsvērtība. Runājot par mākslas grāmatu nākotni, L. Slava sarunas nobeigumā ar J. Verneru spriež, ka, lai arī minimāli nepieciešamais darbs mākslas grāmatu vēsturiskā mantojuma daļā būs padarīts, tomēr mākslas process vētraini turpinās, tas ir atvērts un lielu dažādību ietverošs, vismaz trīs jaunākās paaudzes jau ir pievienojušas virkni spilgtu personību, kam pienākas atpazīstamība grāmatā (Venera, 2021).

Arī pasaules pieredze apliecina, ka cilvēki uztver grāmatas kā bagātīgu zināšanu un gudrības avotu jau daudzus gadsimtus. Tas ir tilts, kas savieno dažādas kultūras, tautas un paaudzes. Lai gan lasīšana 21. gadsimtā ievērojami vairāk norisinās digitālā formā, grāmatu kultūra paliek arvien vairāk atkarīga no aparātiem, programmām, specifiskiem satura formātiem un izplatīšanas platformām un mūsdienās grāmatu lasīšanas rādītāji nav izcili, tomēr dažās pasaules daļās tie uzrāda noturīgumu (Skulte, 2019), piemēram, ASV esošās pasaulē lielākās lietoto grāmatu tirgotavas tiešsaistē ThriftBooks 2018. gadā publicētajā pētījumā par ASV iedzīvotāju lasīšanas paradumiem norādīts, ka 70 % respondentu dod priekšroku drukātām, nevis e-grāmatām (ThriftBooks, 2018). Pēc tam, kad 2007. gadā parādījusies Amazon Kindle tiek cildināta kā ietekmīgs lasīšanas paradumu maiņas rīks (Hansell, 2008), Umberto Eko un franču rakstnieks un kinorežisors Žans Klods Karjērs publicē grāmatu “Neceriet atbrīvoties no grāmatām!”. Tajā līdzās argumentiem par labu grāmatas noturīgumam mūsdienu kultūrā U. Eko atzīmē, ka internets patiesībā ir izglābis lasīšanu un grāmatas no norieta (Eco, & Carrière, 2009). “Bez tā jau personība nemaz īsti nevar nobriest, jo ar mūsu ikdienišķo pieredzi cilvēkam ir par maz. Ar vienu dzīvi ir par maz. Caur grāmatām mēs saņemam šo daudzo dzīvju kvintesenci un emociju kvintesenci, dzīves modeļu, attieksmju, attiecību kvintesenci, kas mūs lielā mērā padara par to, kas mēs esam (..)” intervijā projektam “Bibliotēka” saka Latvijas Nacionālās bibliotēkas Atbalsta biedrības direktore Kārīna Pētersone (Kārīna Pētersone: Literatūra lielā mērā padara mūs par to kas mēs esam, 2018). Latvijas Kultūras akadēmijas Zinātniskās pētniecības centra 2018. gadā veiktā pētījuma par Latvijas iedzīvotāju grāmatu lasīšanas paradumiem rezultāti liecina, ka Latvijā ir stabili grāmatu lasīšanas paradumi, aptuveni puse jeb 52% no visiem Latvijas iedzīvotājiem vismaz reizi mēnesī un biežāk izlasa kādu grāmatu. 13% no aptaujātajiem lasošajiem iedzīvotājiem norāda, ka lasa memuārus un biogrāfijas (Laķe u.c., 2018).

Savukārt kultūras mantojuma aktualitāte ir pārlaicīga. Pēc Nacionālās kultūras mantojuma pārvaldes vadītāja J. Dambja vārdiem: “Cilvēce nevar pastāvēt bez atmiņas, bez kultūras mantojuma. (..) Kultūra ir mūsdienu

sabiedrības dzīves kvalitātes nodrošinājuma pamats, kultūra plašākā jēdziena izpratnē ir vienīgais instruments civilizācijas attīstībai. (..) (Dambis, 2020).

Līdz ar to var secināt, ka grāmatu, un tai skaitā mākslas grāmatu, aktualitāte saglabāsies, to izdošana drukātā formātā neizzudīs, jo mākslas grāmatām ir sava pievienotā vērtība, ko rada tieši fiziskais, taustāmais grāmatas formāts, tās dizaina elementi un materiāla īpašības, kā arī, daudzveidīgais kultūrvēsturiski nozīmīgais saturs.

## Summary

Although art books are considered niche products, attracting the interest of a relatively small number of people, they have not lost their relevance for many years. On the contrary, more and more art galleries and museums have begun to publish art books and albums about artists, art genres, and movements in art. Especially in this digital era, a monograph is a stable asset for any artist's recognition, and its basic condition is 'publish or perish' (Nedo, 2016).

Where does the phenomenon of the stable popularity of art books lie? What makes a good book about art and how to create it? Research on art books is necessary to determine their role in today's cultural space and how to create a good book about art that contributes to enriching the cultural space.

The art market is open to books. They further blur the already fragile boundary between the commercial and non-commercial or symbolic aspects of value creation.

The purpose of the article is to explore the types of art books and their significance in today's cultural space, which is a preliminary stage for author Gita Līpenīte-Čudarāne's project to develop the content and graphic design of a biographical art book on the creative work of the artist Modest Līpenītis.

Research methods: theoretical - study, collect, and analyze scientific and professional literature and sources relevant to the topic; empirical - conduct interviews with experts in the field of culture and art.

The types of art books analyzed in the literature review confirm the possibilities of preserving art's cultural-historical value in various manifestations, both as a specific artist's contribution and influence on society, the manifestation of art genres, and the interpretation of historical context.

In order to clarify experts' views on the significance of art books in today's cultural space, a survey was conducted using structured interviews. Experts selected as respondents are specialists in specific areas who evaluate phenomena or processes to uncover and assess various aspects of the researched problems.

The responses provided by the experts and their comparison with the opinions of researchers and professionals in the discussion section allow concluding that art books provide a valuable contribution to promoting cultural education, preserving and transmitting cultural-historical values to future

generations, as well as a valuable contribution to historical research. In an era of fluctuating information, the publication of art books in printed form plays a special role. A good art book is one that is, in itself, a work of art. The most popular approach to writing art books in Latvia is artists' biographies.

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## INTEGRATION OF MUSIC AND ART: SOME ASPECTS TO TEACHING HISTORY OF ART

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**Abstract.** *One of the trends in the process of updating the contemporary education is the use of the integrated approach to teaching. The integrated approach to teaching creates the environment which helps learners to understand relations between the areas of content of different arts. This approach is first and foremost oriented towards the development of learners' creative thinking and imagination.*

*The program developed for teaching potential designers in Daugavpils University includes courses on history of Art. The History of Art operates with such common art categories as harmony, rhythm, genre, form, style, content, contrast, imaginative contrast etc. Being aware of mutual links between such arts as painting and music will develop understanding about associative imaginary links of the language of artistic expression. Comprehension of composer's or painting's creative work or an individual composition within the context of spiritual quest of the epoch allows us to broaden our perceptions about general regularities of the development of historical processes and art in one or another historical period. Those developmental periods of art, when the interaction between its different kinds was the most intensive and satiated the whole cultural aspect of the epoch (romanticism, impressionism, expressionism), attract the greatest attention. In music literature, the most delicate form of sound patterns is manifested in musical landscapes. Natural phenomena, due to their nature, can be not only seen but also heard, and therefore, the range of their reflection in music is tremendously broad. The research aim based on an integrated approach to teaching, to research the interaction between music and painting, as example using the creative work of Latvian landscapist Vilhelms Purvītis and Latvian composer Alfrēds Kalniņš. The paper focuses on the possibility to integrate art and music in the context of enrichment of students' knowledge and skills.*

**Keywords:** *Art Nouveau, composition, integrated Approach, landscape, parallels of creative work.*

### Introduction

At present, the course towards a universal globalization of economy, intensive development of international contacts, and changes in technologies lead education to integration. To acquire the systemic and inter-disciplinary style of thinking, skills of seeing the subject as the unity of diverse links and interrelations become vital for students today. The integrated approach to

teaching provides teachers of different subjects with the opportunity to jointly solve educational tasks and raise the level of theoretical scientific knowledge.

On the whole, art is syncretic by its nature. According U. Hübenthal, solving many problems in the process of mastering the study content, interdisciplinary cooperation is required, because these problems are too complex to be solved simply with the subject knowledge of one discipline (Hübenthal, 1994).

The program developed for teaching future designers at Daugavpils University involves courses on history of art, for example such as *Latvijas mākslas vēsture* 'History of Latvian Art', *Rietumu mākslas vēsture* 'History of Western Art'. Trying to identify integrative interrelations between painting and music involves students-designers into an integrated learning of world picture of art. The integrated approach to teaching these courses contributes to the renewal and broadening of their content, to changing methods of teaching, and establishing and generalization of hereditary and international links.

Many 20<sup>th</sup> century researchers in the field of issues of integration in education offered three basic categories for interdisciplinary work - multidisciplinary, interdisciplinary, and transdisciplinary (Humphreys, Post & Ellis, 1981; Jacobs, 1989; Lipson, Valencia, Wixson & Peters, 1993; Lake, 1994; Klein, 1997).

The paper focuses on the possibility to integrate art and music in the context of enrichment of students' knowledge and skills.

The research aim is to research the interaction between music and painting, as example using the creative work of Latvian composer Alfrēds Kalniņš and Latvian landscapist Vilhelms Purvītis.

## **Methodology**

The complex of research methods applied in this research is as follows: the analysis of theoretical literature, and some musical compositions by Latvian composer Alfrēds Kalniņš and landscapes by Latvian landscapist Vilhelms Purvītis.

## **Results**

To reveal the nature of culture of some period of time is impossible without making links and drawing parallels with different kind of arts. Like art, the perception of a musical composition on the emotional level entails personal emotional involvement (Nazaykinsky, 1972). However, this would be impossible without developing the ability not only to see, but also hear. (Hargreaves, 2017).

The comprehension of composer's or artist's creative work, or of some single musical composition or a composition of painting within the context of the spiritual quest of the epoch allows broadening students' perception about the historical processes and common developmental regularities of art in one or another period.

Those developmental periods of art, when the interaction between its different kinds was most intensive and satiated the whole cultural aspect of the epoch (romanticism, impressionism, expressionism), attract the greatest attention.

The most significant progress of music art towards painting was observed at the beginning of the 19th c. when period of Romanticism began. Instrumental music often had features of theatre art, dance, while programmatic compositions - those of landscape, fine art, thus exhibiting impact of various kinds of art.

Music became more apparent and visual. In his study *Izobrazitelnoe iskusstvo i muzika* 'Fine Art and Music', V. Vanslov provides an in-depth analysis of the impact of the form of fine art on music, using compositions by F. List and S. Rachmaninov as examples (Vanslov, 1983). In literature on music, one of the most delicate forms of sound patterns is manifested in *musical landscapes*. Natural phenomena, due their nature, can be not only seen but also heard, therefore, the range of their reflection in music is enormously broad.

### **Points of Intersection in Lives and Creative Work of Alfrēds Kalniņš and Vilhelms Purvītis**

The integrated approach to studying arts is possible due to the fact that some kinds of art, for instance painting and music, reflect and depict one and the same object of the reality around us, but they do it from different viewpoints, with different means of expression typical only of this specific kind of art which, at getting integrated, create integrated visual and emotional images and perceptions.

From the position of the interaction between painting and music, creative work of Latvian composer Alfrēds Kalniņš (see Fig. 1) and Latvian landscapist Vilhelms Purvītis (see Fig. 2) attract a special attention.

The composer and the landscapist were born approximately at the same time (in the same decade).





Figure 1 *Alfrēds Kalniņš* (<https://enciklopedija.lv/skirklis/32645-Alfr%C4%93ds-Kalni%C5%86%C5%A1>)

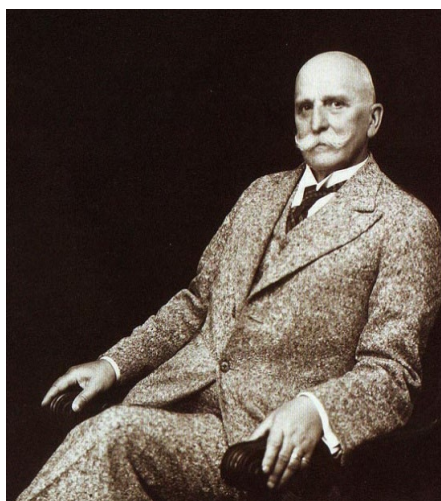


Figure 2 *Vilhelms Purvītis. Fotoportrets 1938.*  
([http://www.makslasvesture.lv/index.php/Att%C4%93ls:Purvitis\\_foto\\_2.jpg](http://www.makslasvesture.lv/index.php/Att%C4%93ls:Purvitis_foto_2.jpg))

**Alfrēds Kalniņš (1879 – 1951)** – an outstanding Latvian composer, organist, educationalist, music critic and conductor, the founder of Latvian national opera.

**Vilhelms Purvītis (1872 – 1945)** – a famous Latvian artist of the end of the 19th c. and the beginning of the 20th c. and a founder of art institutions.

Their creativity developed in the same esthetic environment. In 1890, V. Purvītis began to study at Petersburg Art Academy, and he came back to Latvia only in 1899. However he continued to participate in the art exhibitions organized in Petersburg and Moscow till 1903. Alfrēds Kalniņš studied at Petersburg Conservatoire at about the same time – from 1897 to 1901.

During Petersburg period, among the friends of Alfrēds Kalniņš were Latvian painters and sculptors – T. Zaļkalns, G. Šķilters, B. Dzenis – together with whom he often visited art exhibitions and shared experience.

“...I have to admit that I got more from looking at some pictures than from listening to some empty piece of music. Levitan’s landscapes left especially great impression on me, in front of some of his pictures, “Cloister on the Riverside”, for example, which filled me with such peace, I stood for a long time and always returned to it again,” – writes a composer in his autobiography (cit. from: Vītoliņš, 1968, p. 16).

In his autobiography, the composer lingers in his memories about exhibitions of Russian and Finnish artists organized by S. Diaghilev, which have left great impression and inspired him: “I’m always thinking about it, trying to become a Latvian composer who will express specific Latvian character and spirit in his sounds” (ibid.)

I. Pujate writes that in 1898, the participants of this exhibition became the core of the association *Vilhelms Purvītis un jugendstils* ‘World of Art’ and V. Purvītis was among them (Pujate, 2000).

In his monograph on the composer’s creative work, A. Klotiņš, too, mentions that the exhibitions of Latvian painters V. Purvītis and J. Valters, held in the Academy of Arts, were in the centre of attention of A. Kalniņš and his friends. “These impressions were essential for developing the specific character of expressing national identity and national character of Kalniņš’ music” (Klotiņš, 1979, p. 55).

During Petersburg period, A. Kalniņš has written his first best-known compositions: *Three Lyrical Pieces* for piano (*Nocturne, Lullaby, Autumn*), solo songs (the tragic *The Bells Sound*), *Fantasy* for organ.

V. Purvītis’ first landscape compositions and sketches (*Thaw in Spring, Winter Landscape, Early Spring, The Last Snow*), which excel in lyricism and a calm, balanced manner of painting, can also be attributed to this time (Lemberga, 2000).

V. Purvītis is fascinated by a changing and brilliant autumn landscape: *Autumn, Autumn Landscape* - painted at the end of the 19th c., *Autumn Atmosphere* – painted in 1907-1908 (see: Fig. 3). This is a confession of painter’s lyrical soul, and its main task is to express the range of human feelings and moods, which this season evokes. These paintings may be peculiar visual analogies with sound images in A. Kalniņš’ piano miniature *Autumn*. In the dark tree leafage, swaying in the wind depicted in V. Purvītis’ painting *Autumn Atmosphere*, we can feel stylistic likeness with A. Kalniņš’ music. The spirit of landscape-atmosphere is close for both artists, these are reflections on eternal values – beauty, emotional experience of soul, grief, joy, hopes...



Figure 3. *V. Purvītis Autumn Atmosphere (Vilhelms Purvītis. Rudens noskaņa. [http://www.makslasvesture.lv/index.php/1890\\_%E2%80%93\\_1915:\\_Ikonogr%C4%81fija](http://www.makslasvesture.lv/index.php/1890_%E2%80%93_1915:_Ikonogr%C4%81fija))*

In *Nocturne*, as A. Klotiņš says, “the extremely plastic and delicately speaking structure with its choric intonations addresses us in the recitative which is so close to the Latvian speech” (Klotiņš, 1979, p. 59). *Nocturne*, as we know, is a song of night, and V. Purvītis’ magnificent night landscapes *Moon-night* (1909), *The Dusk* (1897) and *The Evening Sun* (1904), painted in mysterious grayish-greenish tones, create an impression of poetic mystery and refinement. The dark coloring created by the dusky light, atmosphere, original view of the native nature bring the stylistic techniques of both artists close to art nouveau (see: Fig. 4). In the history of art, art nouveau is sometimes called neo-romanticism. The idea about synthesis of art became the leitmotif of art nouveau, and it was manifested in all arts. Several researchers of the creative work of V. Purvītis and A. Kalniņš – A. Klotiņš, I. Pujate, E. Kļaviņš – mention the presence of art nouveau elements in works by both artists.

A different atmosphere dominates in A. Kalniņš’ *Ballad g moll* (1905): “Here dark epic narrative intertwines with light, lyrical images and dramatic tension” (Vītoliņš 1968, p. 90).



*Figure 4. V. Purvītis Moon-Night (Vilhelms Purvītis. Mēness nakts.*  
[http://www.makslasvesture.lv/index.php/Att%C4%93ls:Purvitis\\_Meness\\_nakts.jpg](http://www.makslasvesture.lv/index.php/Att%C4%93ls:Purvitis_Meness_nakts.jpg))

The basic theme sounds in the form of a severe ancient chant which evokes associations of images in V. Purvītis' pictures *A View of the Daugava Near Riga* (1896), *Morning in Revelle* (1906 - 1909) ((see: Fig. 5). Variations of color, softening of contours, and traces of individual strokes of the brush made Purvītis' landscapes free and pictorial, but they simultaneously maintained an obvious or anticipated strict compositional structure of straight directions and margins (Pujate, 2000).



*Figure 5. V. Purvītis. Morning in Revelle. (Vilhelms Purvītis. Rīts Rēvelē*  
[https://arterritory.com/lv/vizuala\\_maksla/raksti/26156-17\\_fakti\\_par\\_vilhelmu\\_purviti/](https://arterritory.com/lv/vizuala_maksla/raksti/26156-17_fakti_par_vilhelmu_purviti/))

In the creative work of A. Kalniņš and V. Purvītis, the parallels can be drawn not only in the aspects of time and stylistic devices used, but the events of their lives also tell about surprisingly great similarity of life situations. The schematic analogies between the two artists can be provided as follows (see: Table 1):

Table 1 *V. Purvītis and A. Kalnins - their Life and Work Parallels*

	Vilhelms Purvītis	Alfrēds Kalniņš
Life time	1872 - 1945	1879 - 1951
Studies	Petersburg Art Academy from 1890 to 1899. Participated in exhibitions in Petersburg and Moscow till 1903	Petersburg Conservatoire from 1897 to 1901
“the second motherland” - Estonia	From 1906 to 1909 lived in Revele (Tallinn)	From 1903 to 1911 lived in Pernava
Comparison of artists' works	Autumn, Autumn Landscape, Autumn Atmosphere (1907 – 1908)	Autumn (1903)
	Moon-Night (1909), The Dusk (1897), The Evening Sun (1904)	Nocturne (1903)
	View of the Daugava Near Riga (1896), Morning in Revelle (1906 - 1909)	Ballad (1911)

Though being aware of the complicated life conditions in their native country, both A. Kalniņš and V. Purvītis come back to Latvia after their studies in Petersburg. Both are attracted by the nature of the native country and both have high sense of duty – to serve their own people, their own country. At that time – the beginning of the 20th c. – among Latvian intelligentsia there were neither any real connoisseurs of art nor art admirers. Due to the complicated conditions and not seeing any possibilities for implementing their creative ideas, both A. Kalniņš and V. Purvītis left Riga. In 1903, A. Kalniņš began working in Pernava (Estonia) and was an organist, choir conductor and teacher till 1911. During the Revolution of 1905, V. Purvītis came into public conflict with nationalistic-minded Latvian intelligentsia and from 1906 to 1909 lived in Revel (Tallinn, Estonia), where he worked as a teacher of drawing. Estonia became the “second motherland” for both artists. The theme of the native country, its nature and life of their people is the basic theme of artists' creative work.

In his paper about V. Purvītis, E. Kļaviņš points out that during all of his life the artist has followed his own way – a way of modernizing painting. He did not follow any trends or masters, but tried to combine the past traditions with

findings of the 20th century (Kļaviņš, 2000). The same is true about the creative quest of A. Kalniņš.

The interaction between painting and music, their ability to add to each other in the course *Latvijas mākslas vēsture* 'Latvian art history' on the example of V. Purvītis and A. Kalniņš, promote a deeper and more emotional revealing of artistic images.

### Conclusion

1. The integration of different kinds of art allows diversifying the analysis of musical and artistic compositions, attracting potential designers to studies of creative processes.
2. The comparison and analogies of masters of Latvian music and Latvian painting – A. Kalniņš and V. Purvītis – broaden the knowledge about the art style of the end of the 19th c. and the beginning of the 20th c.
3. In the creative work of A. Kalniņš and V. Purvītis, the parallels can be drawn not only in the aspects of time and stylistic devices used, but the events of their lives also tell about surprisingly great similarity of life situations.
4. The analogies between lives, works and stylistic peculiarities of both artists help to create additional perceptions about the core of Latvian art culture of a definite period.

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**PSIHOLOGIJA UN  
KOMUNIKĀCIJA**

*Psychology and Communication*



# DYNAMICS OF STUDENTS' PSYCHOLOGICAL WELL-BEING

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**Abstract.** *This scientific article reflects the results of research on the psychological well-being of students of Rēzekne Academy of Technologies in 2019 and 2023. The need for such studies is justified by recent studies in various countries, which show that the prevalence and severity of mental problems among young people is increasing. Taken together, these studies show that students are increasingly experiencing symptoms of increased anxiety and stress, as well as depression. Thus, the deterioration of students' psychological well-being is a major challenge in modern universities. The aim of the empirical study: to reflect the dynamics of the level and content of the psychological well-being of young students. The analysis of scientific literature and empirical results is used as a basic method in the development of the article.*

**Keywords:** *dynamics of students, psychological well-being, adaptation, demographic and social determinants of students' psychological well-being, gender, material security, health.*

## Introduction

The problems of psychological well-being becomes especially relevant in the youth and early adulthood stages, when a person's identity is formed, as well as the next profession is chosen and its basics are learned. High psychological well-being is associated with a sense of purpose in young people's lives, optimism, the ability to establish positive relationships with others, which create prerequisites for positive personality development.

The need for studying the psychological well-being of young students is also justified by recent studies conducted in different countries (Cvetkovski, Reavley & Jorm 2012; Baik et al., 2015; Eisenberg et al., 2009; Larcombe et al., 2015; Slavin et al., 2014; et al. ), what show that there is a decrease in psychological well-being in the student environment, which is related to students' professional self-determination, material security, household and social adaptation problems, as well as the spread of mental illnesses. The mentioned authors conclude that the symptoms of increased anxiety and stress, suicidal ideation, obsessive-compulsive disorder, as well as depression are increasingly detected in the environment of young students.

The purpose of this article: to reflect the changes in the psychological well-being of Rezekne Academy of Technologies (RTA) students, compared to the studies of this phenomenon conducted in 2019.

The analysis of scientific literature and empirical results were used as basic methods in the creation of the article.

### Theoretical substantiation of the research

The conducted empirical studies of the psychological well-being of young students were based on researcher K. Ryff's Six Factors theory of psychological well-being (Ryff, 2017).

In the following, the mentioned factors are described in the context of the psychological well-being of young students (see Table 1).

*Table 1 C. Ryff's Six-factor model in the context of psychological well-being of students*

*(created by the author according Anic, Tončić, 2013; Ryff, 2014; Viejo et al., 2018)*

<b>The content factor of psychological well-being</b>	<b>Characterization of the factor in the context of the student's personality and study process</b>
<i>Self acceptance</i>	Related to the accurate and adequate perception of the student's motives, feelings and actions. Self-acceptance also means awareness and acceptance of one's own characteristics, which are particularly relevant in the process of youth identity formation and professional identification.
<i>Positive relationships with others</i>	A factor associated with emotional well-being from warm, trusting relationships with others, as well as the ability to care for them, as well as understanding the need for compromise in mutual relationships. Thus, the ability to form close relationships with others shows the emotional and social maturity of the student's personality.
<i>Personal growth</i>	The factor of psychological well-being, which is directly related to the study process and the student's growth as a future specialist, because it predicts the sense of personal development of young people and the ability to realize their potential, openness to new experiences, greater self-improvement and improvement of their behavior over time, as well as deeper and deeper self-awareness and higher efficiency.
<i>Purpose in life</i>	The factor predicts the student's ability to act in the direction of his personally significant goals. In the context of the study process, it implies purposefulness in learning the chosen profession, the ability to overcome objective and subjective difficulties of the study process, and it is also important that the young person is convinced of the importance of his goals.
<i>Environmental mastery</i>	It is characterized by the student's ability to choose or create such conditions that correspond to the personal essence and allow him to effectively direct his life.
<i>Autonomy</i>	This factor, in the context of the study process, presupposes the student's ability to organize various aspects of his life related to the fulfillment of study requirements, creating favorable living conditions, as well as the ability to create an environment that promotes psychological well-being in general.

The psychological well-being of young students is influenced by a diverse set of factors. Based on research on the diversity of determinants of the phenomenon of psychological well-being (Akhtar, 2015; Baik et al., 2015; Bexley et al., 2013; Boyce et al., 2010; Burns, Machin, 2010; Demir, 2010; Ibrahim et al., 2013; Larcombe et al., 2015; Lerkkanen et al., 2018; Nepomuceno et al., 2016; Özdemir & Tuncay, 2008; Roslaba et al., 2017; Ryff, 2017; Schofield et al., 2016; Shaw et al. ., 2002; Sarokhani et al., 2013; Tommis et al., 2007;), Table 2 summarizes several factors that significantly affect the psychological well-being of young students.

*Table 2 Demographic and social determinants of students' psychological well-being (created by the author)*

<b>Demographic factors</b>	<b>Effects on the psychological well-being of young students</b>	<b>Social factors</b>	<b>Effects on the psychological well-being of young students</b>
<i>Gender</i>	Women are characterized by a higher level of positive relationships with others than men. In general, significant differences between the level and content of psychological well-being of men and women are not found.	<i>Social activity</i>	The social activity of young students positively affects their psychological well-being, developing the social competence of young people and providing the necessary social support.
<i>Place of residence</i>	Place of residence affects psychological well-being, in relation to the socio-economic conditions of a given rural or urban environment.	<i>Material security</i>	Insufficient material security increases the stress level of students on a daily basis, promotes doubts about successful graduation from a higher educational institution, creates the need to work in parallel with the study process, which negatively affects the psychological well-being of students.
<i>Health condition</i>	Physical health condition and health behavior habits, as well as the subjective interpretation of one's own physical health contribute/deteriorate students' psychological well-being.	<i>Quality of living conditions</i>	The social and physical factors of students' living conditions (noise, environmental temperature, number of students) in or outside the dormitories significantly affect their psychological well-being on a daily basis.
<i>Leisure content</i>	The psychological well-being of students is positively influenced by belonging to certain interest groups and playing	<i>Study environment</i>	The need to adapt to the study environment, the hygienic conditions of the study process, leaving the previously usual environment significantly

	sports. Forced activities, common use of alcohol or other psychoactive substances, frequent night clubs, or inactivity worsens students' psychological well-being.		increases the psychological tension of students, which in case of weak adaptation abilities can lower their psychological well-being.
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It should be emphasized that this article reflects changes in the overall level and content of the psychological well-being of young students compared to the study of these factors in 2019.

### Research organization and process

The research scheme and methodologies are illustrated in Figure 1.

The study included the study of students' psychological well-being using K. Ryff's "Psychological Well-Being Scales" (Ryff & Keyes, 1995). The first stage of the study was carried out in 2019, and the second stage in 2023. The research sample consisted of 90 respondents in both stages of the study.

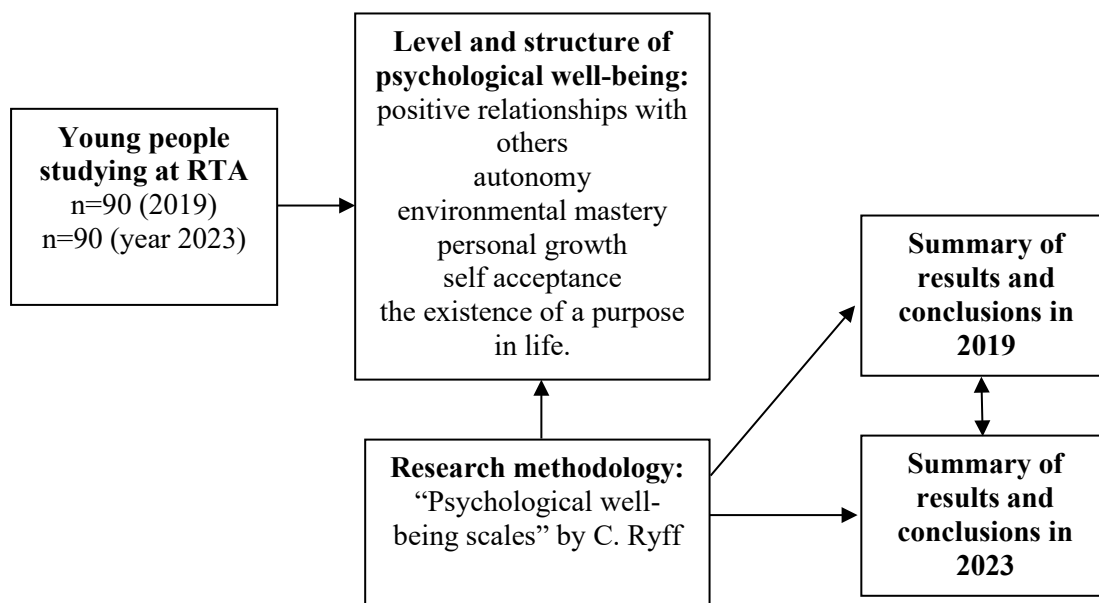


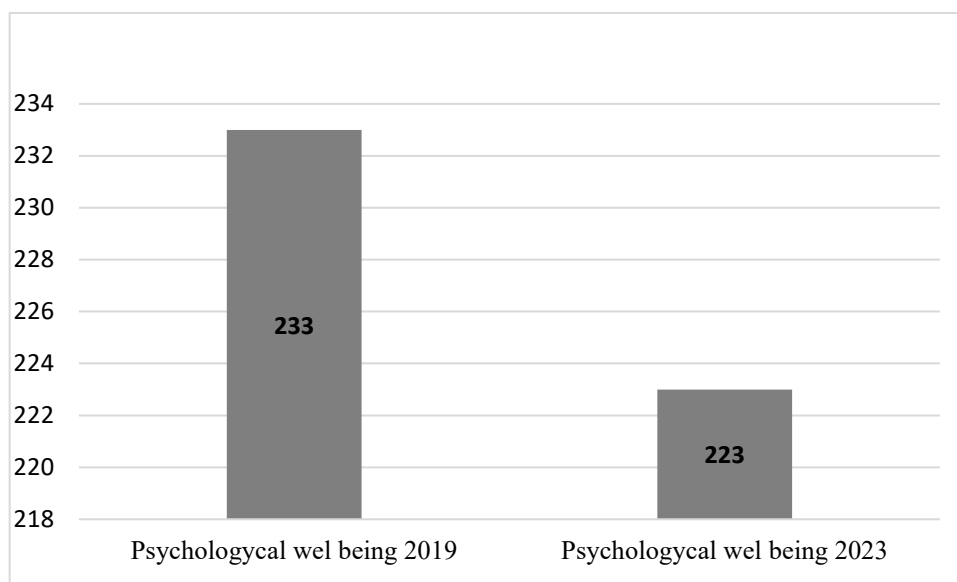
Figure 1 *Scheme of empirical research*

In the final stage, the collection, processing and analysis of the initial results took place. The average values of the respondents' results were used in the analysis of the content and level of psychological well-being.

### **Research results**

In the first stage of the analysis of the obtained data, the overall level of psychological well-being of students in 2019 and 2023 was compared. As can be seen, the overall level of psychological well-being of young people studying in 2019 was higher (233 points according to the test results) than in 2023 (223 points according to the test results). Such results correlate with the general trends of decreasing psychological well-being and mental health of young people worldwide (Cvetkovski, Reavley & Jorm 2012; Baik et al., 2015; Eisenberg et al., 2009; Larcombe et al., 2015; Slavin et al., 2014; et al.).

However, despite the observed decrease in the level of psychological well-being, the psychological well-being of students in both 2019 and 2023 can be assessed as average (according to the C. Ryff's test instructions).

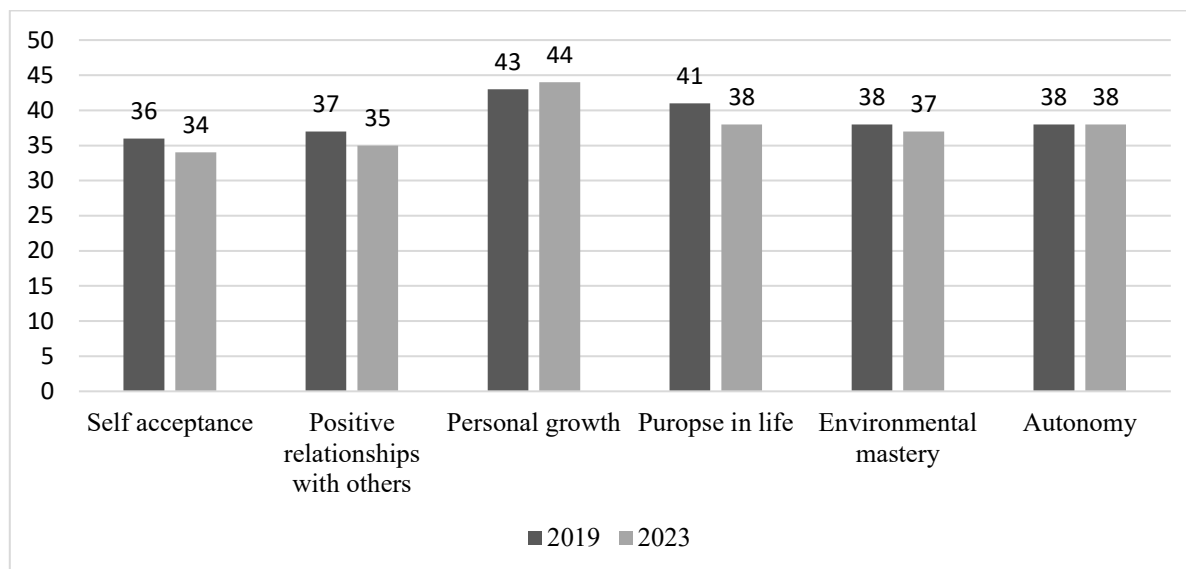


*Figure 2 Comparison of the overall level of students' psychological well-being in 2019 and 2023*

In the next stage of the study, the content of students' psychological well-being in 2019 and 2023 was compared.

Analyzing the content of the respondents' psychological well-being, it is possible to establish that the students of the studied sample are characterized by a high sense of personal growth and purpose in life. In 2023, a slight increase in this factor can be observed, however, students' sense of purpose in life is at a lower level than in 2019. At the middle level, there is autonomy and the ability to fulfill daily needs. The dynamics of autonomy indicators have not changed, but there is a slight decrease in the ability to implement daily needs compared to 2019. On the other hand, the problematic aspects of the psychological well-being of young students are related to relationships with others and self-acceptance. This problem

is characteristic of both the 2019 and 2023 research results. Figure 3 shows that in 2023, self-acceptance and positive relations with others are at a lower level than in 2019.



*Figure 3 Content of psychological well-being of students in 2019 and 2023*

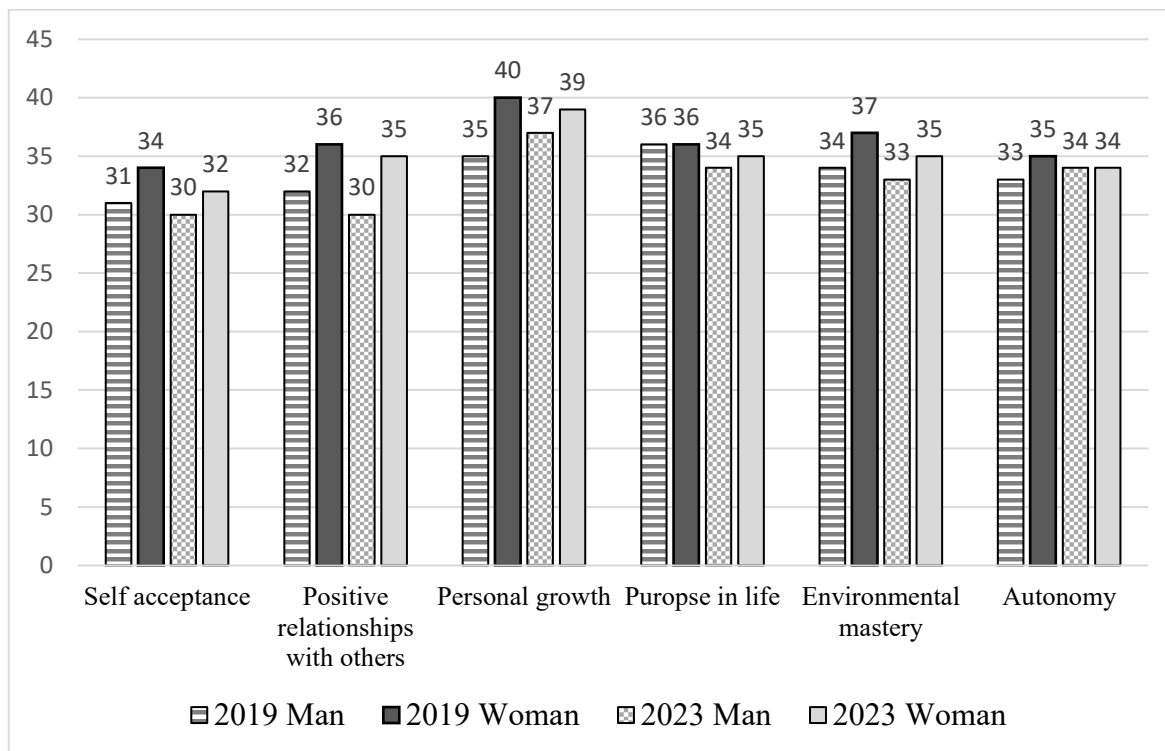
In the next stage of the study, the indicators of content of psychological well-being in 2019 and 2023 were compared in the groups of women and men. (see Figure 4). The distribution of respondents in the study sample by gender was sufficiently proportional (51% women and 49% man in 2019 and 53% women and 47% man in 2023) to make it possible to compare the psychological well-being of young people in groups of different genders.

The obtained results show that the women of the studied sample have a higher level of psychological well-being than the men. In general, the level of psychological well-being of men can be assessed as average, and that of women as high (according to the research methodology instructions). By studying the dynamics of psychological well-being, it is possible to establish that in 2023 the overall level of psychological well-being of women and men has slightly decreased compared to 2019.

Analyzing the results of 2019, it was determined that women are characterized by a higher level of all factors of the structure of psychological well-being, except for the factor “Purpose in life”, the level of which is the same in both groups. For men, the most developed factor is “Purpose in life”, and for women – “Personal growth”.

The lowest level characterizes the factor “Self-acceptance” in both male and female groups.

The only factor in the structure of psychological well-being that is expressed at the same level for both men and women is “Purpose in life”.



*Figure 4 Content of students' psychological well-being in different gender groups in 2019 and 2023*

The most significant differences between men and women can be observed at the level of the “Personal growth” factor.

The mentioned trends of 2019 can also be observed in 2023. However, in contrast to 2019, in 2023, a lower level of sense of purpose in life was found in the male group than in the female group.

The level of autonomy in both male and female groups in 2023 is the same, whereas in 2019, women were characterized by a higher level of autonomy than men.

It should be noted that the obtained results will be used for more detailed research on the influence of the study environment and place of living on the psychological well-being of young people studying at RTA.

### **Conclusions**

As a result of the conducted scientific literature and empirical research, the author came to the following conclusions:

1. The overall level of psychological well-being of the young students in the study sample can be assessed as average;
2. A tendency towards a decrease in the level of overall psychological well-being was found, comparing the results of 2019 and 2023;

3. The students involved in the study are characterized by a high level of personal growth and a sense of purpose in life, which contributes to study achievements;
4. The problematic aspects of respondents' psychological well-being are related to the ability to build positive relationships with others and self-acceptance. This tendency can be observed both in 2019 and 2023. These results highlight the need to promote students' adaptation in the study environment through the activity of mentors and students' psychological support service.
5. Young female students are characterized by a higher level of psychological well-being in all aspects of its content, except for the sense of purpose in life, in which the results of both sexes are identical in 2019, but in 2023, a higher level of the mentioned factor was found for women.

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# PSYCHOSOCIAL ASPECTS OF IMPROVING THE EFFICIENCY OF REHABILITATION OF PERSONS WITH DISABILITIES IN COMMUNITY DURING WARTIME

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**Abstract.** *In the article, the problem of increasing the effectiveness of rehabilitation of persons with disabilities in the community in wartime conditions is updated and substantiated at the theoretical, legal, and empirical levels. On the basis of a focus group survey, the importance and failure to fully realize the problems of rehabilitation of persons with disabilities in the community in wartime conditions were proven. It was established that according to the opinion of persons with disabilities and their parents, the problems of rehabilitation of persons with disabilities are solved to a greater extent by local authorities and local self-government bodies, social services and health care institutions, etc.; there is a need to create a permanent supportive and developmental environment in the community; there is a problem in the organization of work, employment, opportunities to get to work; a violation of the feeling of security is noted, there is a feeling of powerlessness, irritation, misunderstanding of the nearest prospects; fixed need to be listened to and heard, to regularly communicate with specialists. The foreign and Ukrainian experience of psychosocial aspects of increasing the effectiveness of rehabilitation of persons with disabilities in the community is analysed. The author's social project "Different and Equal" is proposed, aimed at improving the efficiency of providing rehabilitation services to persons with disabilities in the community in wartime conditions. The main feature of this social project is that it is maximally focused on integrating the efforts of community members, persons with disabilities and their family members to promote social adaptation, strengthening the resources of persons with disabilities to overcome the challenges and threats of war.*

**Keyword:** *community participation, focus group survey, persons with disabilities, rehabilitation, social project, wartime conditions.*

## Introduction

Statistics of the war in Ukraine show a significant increase in the number of people with disabilities. As the Minister of Social Policy O. Zholnovich testifies, the number of people with disabilities in Ukraine increased by 300,000 during the one and a half years of the war to 3 million people (Zholnovych, 2023). Therefore,

solving the problems of rehabilitation of persons with disabilities is relevant today and requires a conscious and purposeful integration of the efforts of various branches of government, public organizations, territorial communities, and persons with disabilities themselves to improve and increase the effectiveness of the provision of rehabilitation services in wartime conditions.

The regulatory framework for the rehabilitation of persons with disabilities in Ukraine consists of a number of laws and by-laws (the Law of Ukraine "On the Basics of Social Protection of Persons with Disabilities in Ukraine", 1991; the Law of Ukraine "On the Rehabilitation of Persons with Disabilities in Ukraine", 2006 and etc.), in which persons with disabilities are guaranteed equality and respect for rights and freedoms, their social protection, the opportunity to participate in various spheres of society, and discrimination is prohibited. Understanding the current trends in revising and amending Ukrainian legislation on social protection and rehabilitation of persons with disabilities in Ukraine, taking into account the challenges of wartime, we consider it appropriate to direct efforts to justify ways to improve the effectiveness of rehabilitation and psychosocial support of persons with disabilities in wartime, taking into account the possibilities of the immediate environment their livelihoods and community potential.

The purpose of the article is to analyse the system of rehabilitation of persons with disabilities and substantiate the possibilities of increasing its effectiveness in the community in wartime conditions.

To achieve the goal of the research, the following methods were used: theoretical (analysis of scientific and regulatory sources, generalization, modelling); empirical (focus group survey); data processing. In the process of the empirical part of the research, 34 people were involved, including 25 people with disabilities, mentally preserved, including those who move on carts; 9 people are parents of persons with disabilities. The age range of the participants of the focus group survey is 21-55 years.

### **The theoretical background**

Various aspects of the problem of observing the rights and freedoms, social protection and rehabilitation of persons with disabilities in Ukraine are presented in such works: M. Buk (2020), D. Kiblyk (2021), I. Molochenko (2021), T. Perehudova (2015) and others. Features of the organization and provision of services by types of rehabilitation for persons with disabilities were revealed by Yu. Bezsmertny, G. Bezsmertna (2018), Yu. Bryndikov (2018), G. Leshchuk (2017), K. Chupina (2020), and others. The foreign experience of rehabilitation of persons with disabilities and the conditions for its optimization was studied by O. Halytskyi, R. Hryshova (2019), T. Peregudova (2015) and was presented in the works of N. Grills (2019), A. Tsaloglidou (2015), A. Wilmowska- Pietruszyńska

(2023) and others. Scientists and practitioners tend to endow the process of rehabilitation of persons with disabilities with features of a complex, systematic, and consistent nature. The idea that now there is a direct need to provide an interdisciplinary approach to the provision of rehabilitation services to persons with disabilities, to include in this process specialists with different professional activities (psychologists, doctors, physiologists, teachers, social workers, etc.) (Buk, 2020; Kiblyk, 2021; Molochenko, 2021; Grills & Varghese, 2019). In the format of the rehabilitation process, several interrelated types of rehabilitation for persons with disabilities are combined: psychological (restoration and/or correction of lost personal capabilities, mental functions, increase of its adaptation potential); social (restoration of lost functions and connections with the social environment, social status of the individual, promotion of social adaptation and social integration into the community); medical (prevention of disability due to restoration of impaired body functions, work capacity); pedagogical (restoration of spiritual and moral harmony, development of creative abilities, promotion of opportunities for self-realization); legal (restoration of a person's legal rights, if they were alienated or violated); physical (restoration of physical health, leading a healthy lifestyle, assistance in stabilizing health and working capacity); professional (combination of the components of career guidance, professional choice, retraining or advanced training, rational employment) and others (Bezsmertnyi & Bezsmertna, 2018; Bryndikov, 2018; Leshchuk, 2017).

In a number of laws of Ukraine, the rehabilitation of persons with disabilities is defined, in particular, as: a complex of organized measures that are necessary for a person who experiences or may experience restrictions in everyday functioning due to the state of his own health in interaction with the environment (the Law of Ukraine "Basics of legislation of Ukraine on health care", 1993); a system of medical, psychological, pedagogical, physical, professional, labour, physical culture and sports, social and household measures aimed at providing assistance to individuals in restoring and compensating for impaired or lost body functions in order to achieve and maintain social and material independence, labour adaptation and integration into society, as well as providing persons with disabilities with technical and other means of rehabilitation and medical products (the Law of Ukraine "On the Rehabilitation of Persons with Disabilities in Ukraine", 2006). According to the Law of Ukraine "On the Rehabilitation of Persons with Disabilities in Ukraine" (2006), the concept of "person with disabilities" is used in relation to adults with stable limitations in life and for whom disability has been established in accordance with the procedure determined by the legislation. According to the Law of Ukraine "On the Status of War Veterans, Guarantees of Their Social Protection" (1993), persons with disabilities as a result of war are recognized as persons with wounds, contusions, mutilations, diseases, other health impairments as a result of service, as well as protection of the national security of the Motherland, participation in elimination

of nuclear threats, participation in deterring the armed aggression of the Russian Federation, participation in the Revolution of Dignity.

In the countries of the global community, at the level of the main regulatory and legal documents, common ideas with Ukrainian regarding social protection and rehabilitation of persons with disabilities sound (Halytskyi & Hryshova, 2019; Perehudova, 2015). Given the scientific article's purpose, we consider it appropriate to mention the key principles of the "social model" of disability in Poland, which provides for the creation of full opportunities to promote the social integration of people with disabilities in life, as well as focusing on the realization of their abilities, creative development, group work and leisure. A. Wilmowska-Pietruszyńska emphasizes that the main goal of the rehabilitation of persons with disabilities is to enable them to live their lives according to their wishes, accepting the inevitable limitations in activities that have arisen as a result of injuries, illness or trauma. This goal can be achieved by combining the following actions: elimination or reduction of dysfunctions; elimination or reduction of obstacles to participation in the life environment; support for social reintegration of a person with a disability (Wilmowska-Pietruszyńska, 2023).

The concept of "autonomous life" by A. Tsaloglidou promotes the principle of equality and emphasizes the importance of removing barriers that arise in the daily life of people with disabilities (Tsaloglidou, 2015). The author considers employment, social protection, inclusion in cultural activities, provision of assistance services, and support of their family members to be important components of psychosocial rehabilitation of persons with disabilities.

In the GBR N. Grills, J. Varghese model, emphasis is placed on the capabilities of communities in providing full and comprehensive support and rehabilitation of persons with disabilities, the key principles of which are defined as: respect for dignity and individual autonomy; lack of discrimination; full and effective involvement in society; respect for the peculiarities and acceptance of people with disabilities as a component of human diversity and humanity; equal opportunities and gender equality; availability, etc. (Grills & Varghese, 2019). In order to implement the model and optimize the provision of rehabilitation and other services to persons with disabilities in the community, N. Grills, J. Varghese considers it necessary: a mandatory study of their real needs based on a reference group survey or a "joint assessment group"; uniting as many stakeholders as possible, producing effective connections between them to strengthen community resources; maintaining a constant dialogue with community leaders, persons with disabilities and their families; modelling a therapeutic community of community members to raise awareness of issues and protect the rights of persons with disabilities, provide them with effective psychosocial support, etc.

Therefore, on the basis of the conducted theoretical analysis of the sources, we consider it appropriate to single out several key characteristics of the system of rehabilitation of persons with disabilities in modern conditions:

implementation of a comprehensive approach and maximum adjustment of rehabilitation of persons with disabilities to the usual rhythm of their life in the community; focus on ensuring the rights and freedoms of persons with disabilities and their real individual needs and requests at the level of the immediate environment (family, support group, specialists of special services, the entire community); meeting the needs of persons with disabilities, taking into account the specifics of their health, life restrictions, the potential of the living environment and the community; directing the implementation of psychological, social, pedagogical, medical, physical, professional, labour rehabilitation measures, in particular, with the involvement of community members; observance of important principles of rehabilitation of persons with disabilities (early start of rehabilitation, comprehensiveness, continuity and continuity, individual approach, social focus); promoting the integration of persons with disabilities into reference communities (by age, interests, abilities, professional orientation, etc.), as well as increasing the level of their independence in such integration.

### **Methodology, organization and result of the research**

Considering the results of the theoretical analysis of the problem, an acceptable idea of creating a new social project was determined, which would meet the challenges of the time, take into account the requests and peculiarities of the target group, would have the opportunity to mobilize and maximally use the resources of the community to increase the effectiveness of the rehabilitation of persons with disabilities in the wartime conditions. The work with the social project united several successive stages: the first – determination of the theoretical and methodological basis of the project based on the analysis of current regulatory and legal sources, the study of modern domestic and foreign experience in organizing the rehabilitation process of persons with disabilities; the second is to conduct a focus group survey of persons with disabilities and their family members in order to study their opinion regarding the potential for increasing the effectiveness of rehabilitation of persons with disabilities in the community in wartime conditions; the third – definition of the purpose and tasks of the social project, coordination of its directions, methods and forms of work, necessary professional and resource support; the fourth is the implementation of a social project based on the public association of persons with disabilities.

In order to clarify the subjective expectations of persons with disabilities and their family members regarding the forecasts for this social project, as well as factors that may affect its course or results, we conducted a focus group survey, which involved 34 persons, including 25 persons with disabilities, mentally preserved, including those who move on carts; 9 people are parents of persons with disabilities. The age range of the respondents is 21-55. Participants from among persons with disabilities formed two focus groups, parents of persons with

disabilities entered one focus group. During the focus groups, the principles of informed voluntary consent, confidentiality, the ability to stop participating in the discussion, etc. were observed.

Questions for discussion by focus groups related to the assessment of the degree of satisfaction with the process of providing rehabilitation services to persons with disabilities in the community in general and in war conditions in particular; expressing an impression regarding the created opportunities for social integration into community life; announcement of wishes to improve the rehabilitation potential of persons with disabilities in the community in wartime conditions. We will analyse the trends revealed in the answers of the participants of the focus groups.

The first trend is the closedness of the problems of rehabilitation of persons with disabilities. Only a small number of specialists in the social sphere know about such problems, and the majority of such persons are involved in the provision of rehabilitation services to persons with disabilities. Accordingly, the problems of rehabilitation of persons with disabilities are solved to a greater extent by local authorities and local self-government bodies, social services and health care institutions, etc.

The second trend is the temporary regulation of the rehabilitation process of persons with disabilities. It was about the fact that persons with disabilities generally positively evaluate the rehabilitation services received in rehabilitation centres for children and youth with functional limitations, rehabilitation centres, health care institutions, social services, etc. Although they indicate that there is sometimes a long pre-rehabilitation process associated with the preparation and submission of all necessary documents, waiting, etc. There were thoughts that it would be good to have a constant opportunity to be involved in various types of rehabilitation and not only within the formally organized rehabilitation process.

The third trend is that the war affected the possibility of undergoing rehabilitation, especially at its very beginning. Among the respondents there were persons with disabilities from the number of internally displaced persons, who pointed out the difficulties of their forced resettlement from their usual living conditions. This significantly increased the need for psychological support, legal assistance, provision of information and other consulting services. In addition, there were difficulties in adapting to new living conditions, it was necessary to understand how the system of social protection in the host community was established, the provision of rehabilitation services and to integrate into this process, etc. Volunteers, social service specialists, acquaintances and relatives helped in this.

The fourth trend is the need for constant communication and inclusion. At the beginning of the war, the usual circle of communication was significantly disrupted, as families made decisions about security, tried to understand all the threats, so they began to communicate less, there was less attention from friends

and relatives, and less family holidays. It was quite unpleasant. Also, the number of classes, workshops, excursions and other community initiatives has decreased significantly. Now this situation is more or less being restored. Persons with disabilities and their family members said that it would be good if a permanent supportive and developmental environment was created in the community. In particular, if we talk about children with disabilities, young people with disabilities, such an environment could create an opportunity to develop their abilities, join creativity, have the opportunity to communicate, exchange experiences, etc. And it should have a systematic nature, be within the maximum proximity to the housing of persons with disabilities, so that no additional restrictions appear.

The fifth trend is leisure and work. Persons with disabilities and present parents said that they were really interested in participating in various activities for the organization of meaningful leisure time. Such events are held in rehabilitation centres for children and youth with functional limitations, organized by public organizations and the city council. However, they are episodic and people with disabilities spend most of the time at home, these people are not busy, or their free time is related to reading books, watching TV, and going for walks. In the conditions of the war, it became even more difficult. Only a small percentage of people are satisfied with the opportunities they have for performing work (some have found employment on the Internet, perform tasks at home). There is a problem with full employment, as well as opportunities to get to work, although the working conditions are generally satisfied for persons with disabilities. Those who travel in wheelchairs complain of anxiety, the need to quickly gather and go down to the shelters. The same was mentioned by those persons with disabilities who do not work in institutions and organizations.

The sixth trend is that the war changed the usual daily routine. It was necessary to adapt to the conditions of the war, the environment changed. There was more anxiety, there was a feeling of powerlessness, irritation, misunderstanding of what would happen next. The sense of security was violated. Health problems worsened. In the first days and months of the war, the fear that life could end at any moment was especially acute. People with disabilities said that it was scary for them to stay at home alone even for a short time; when there was an alarm signal – a state of panic appeared. It was difficult, and sometimes impossible, due to the inadequacy of the common rooms, to go down into the storage rooms, the "rule of two walls" or simply the corridor saved. Parents of persons with disabilities said that it would be good if someone was always present with their child, even an adult child, or there was a place where they could be constantly safe and under supervision.

The seventh trend is that all persons with disabilities must be heard again. The war changed the rhythm of life, added threats, dangers, experiencing the trauma of losing friends, loved ones, and relatives. It is high time and very



necessary to provide constantly available psychological rehabilitation, psychological counselling, and specialized psychotherapeutic assistance to persons with disabilities and their family members. To be listened to and heard, to regularly communicate with specialists – this was very often mentioned by respondents during focus groups. As the parents said, it is important both psychologically and socially to support children and youth with disabilities, not to take a break during the war regarding cultural events, excursions, meetings, sports competitions, and joint leisure time. According to those present, the more contacts there will be with the environment, the greater the opportunity to restore something similar to the pre-war rhythm of life. For this to happen, it is necessary to speak about the needs and be heard by everyone, who can help to overcome the many challenges and threats of war on a daily basis.

### **Substantiation the key principles of the social project "DIFFERENT AND EQUAL"**

So, the understanding of the need to implement changes in the rehabilitation process of persons with disabilities, the presence of specific expected requests from the target group, the presence of some contradictions between the requests and the real conditions of providing rehabilitation services to persons with disabilities in the conditions of war prompted us to substantiate the social project "DIFFERENT AND EQUAL". Our efforts were focused on two key points: focusing on the actual needs of people with disabilities in war conditions, as well as finding ways to involve the community in solving these problems, providing psychosocial support; diversification of measures, forms, methods of rehabilitation of persons with disabilities by members of the community together with other formal (official, authorized) subjects. The purpose of the social project "DIFFERENT AND EQUAL" was to promote the improvement of the effectiveness of the rehabilitation of persons with disabilities in the community in wartime conditions, and as its priorities and tasks: focus on social integration and self-realization of persons with disabilities in the main areas of their life in the community in conditions wartime; provision of favourable conditions for the rehabilitation of persons with disabilities in various spheres of life in the community, taking into account the peculiarities of wartime; reducing the negative impact of war factors on the effectiveness of rehabilitation of persons with disabilities in the community and providing support to their family members.

The social project "DIFFERENT AND EQUAL" was based on several key provisions: 1) mainstreaming of disability, as the implementation of a comprehensive approach, thanks to which it will be possible to take into account the diverse interests of persons with disabilities and provide them with equal opportunities to ensure the desired inclusion in various spheres of life of the territorial community in conditions of war; 2) personalization, as a social

approach, focused primarily on the characteristics of each person with a disability who will receive rehabilitation services or psychosocial support and will have the right to choose and control the process; 3) public participation at the level of informing, consulting, ensuring dialogue and partnership for: developing a community strategy and action plan in the scope of rehabilitation services; ensuring equal participation of all subjects; creation of maximum accessibility and inclusiveness of rehabilitation policy and services; monitoring how policies and services of the social project meet the needs of persons with disabilities.

We also assumed that increasing the effectiveness of the rehabilitation of people with disabilities in the community in wartime conditions will be facilitated by the joint efforts of various people from among community representatives – psychologists-practitioners, psychotherapists, specialists in social work, masters of folk art, athletes, travel agents, tour guides, students and other socially active members of the community, in particular on a volunteer basis, as well as persons with disabilities themselves and their family members. It is the joint efforts of all participants of the social project, their performance of socially significant activities in the context of the rehabilitation of persons with disabilities, that will strengthen the processes of mutual integration, mutual understanding, mutual respect and tolerance in the community at both the informal and formal levels, will lead to an improvement in the quality of mutual support of community members in difficult conditions wartime (Sarancha & Hilya, 2020).

When substantiating the social project, attention was focused on the formation of a multidisciplinary team to optimize the processes of solving organizational, technical and other issues, the implementation of methods, forms and means of work within the main areas of the social project with the use of modern information and communication technologies, due to the maintenance of a flexible Internet system communication, which is especially important in wartime conditions (Kolomiets, Palamarchuk, Shulga, Kolomiets & Gaba, 2019). In the design of the key principles of the social project "DIFFERENT AND EQUAL", foreign experience regarding the bases of organizing social rehabilitation of persons with disabilities was also taken into account: the focus of rehabilitation on overcoming psychological barriers, involvement in community life at the local, family and professional levels (Rejman & Błażejowski, 2020); providing access to comprehensive rehabilitation services in the community (Umunnah, Adegoke, Uchenwoke, Igwesi-Chidobe & Alom, 2023); taking into account the peculiarities of psychological counseling of persons with disabilities and their family members (Stuntzner & Hartley, 2014).

Taking into account the conducted analysis of the available foreign and Ukrainian experience, based on the requests received from persons with disabilities and their family members in a focus group survey, the main directions of the social project "DIFFERENT AND EQUAL" were determined:

psychological support – the possibility of receiving affordable permanent psychological / psychotherapeutic help for persons with disabilities and their family members;

meaningful leisure time – designing an environment for the restoration of mental and physical strength, raising the cultural level, manifestations of personal activity, creativity and self-realization, organization of communication, recreation, sports for persons with disabilities and their family members;

joint stay – creating opportunities for people with disabilities who are at home and are alone to receive support during the day, periodically on a schedule during the week.

The intended directions, methods and forms of work in the format of a well-founded social project are presented in Figure 1.

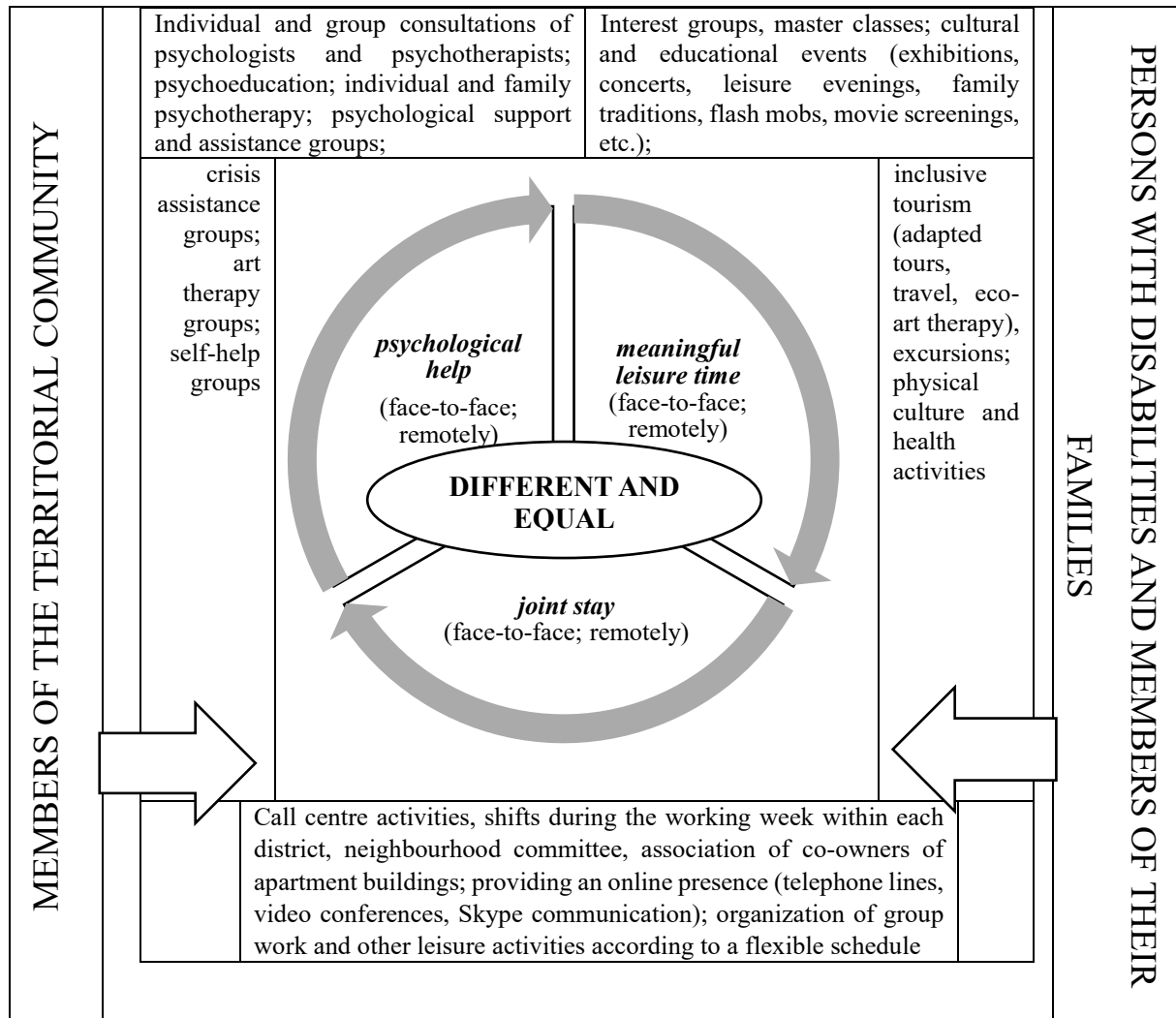


Figure 1 *The essence of the social project "DIFFERENT AND EQUAL"*

Thus, the substantiated social project "DIFFERENT AND EQUAL" is designed to increase the effectiveness of the rehabilitation of persons with disabilities in the community in wartime conditions. The main feature of this social project is that it is maximally focused on integrating the efforts of community members, persons with disabilities and their family members to promote social adaptation, strengthening the resources of persons with disabilities to overcome the challenges and threats of war. The need for its implementation within the boundaries of a specific territorial community in wartime conditions is obvious, which is determined by the fourth stage of our work with the social project. The public organization Vinnytsia City Organization of Social Development and Formation of Individual Underprivileged Categories of Youth "Parostok", which takes care of the satisfaction and protection of legitimate social, economic and other common interests of its members, will be the basis for the implementation of directions, methods and forms of work within the social project "DIFFERENT AND EQUAL", people with disabilities, people living with HIV/AIDS, cancer patients and other socially vulnerable categories of youth and adults by creating for them the conditions of a positively oriented social personality, its full self-realization, which will contribute to increasing the level of social adaptability of these categories of youth and adults in society.

### **Conclusions**

Wartime conditions in Ukraine aggravate the emergence of new risks for persons with disabilities, as they have an additional negative impact on the existing limitations of life activities. The number of people with disabilities in Ukraine is rapidly increasing due to injuries received by citizens in civilian life, as well as due to participation in hostilities; the quality of life decreases, psychotraumatization increases, there are more conventions in the possibilities of maintaining an appropriate level of life activity and receiving rehabilitation services by persons with disabilities due to objective circumstances.

Within the research problem and in modern conditions, one of the effective ways of managing and supporting social processes, achieving effective changes at the level of communities is the technology of social design. The justification of the social project "DIFFERENT AND EQUAL" was based on the subjective expectations and requests of persons with disabilities, as well as their family members, regarding factors that can positively affect the quality and scope of rehabilitation services in the community in wartime conditions.

The social project "DIFFERENT AND EQUAL" is aimed at the target group of people with disabilities aged 18-35. Within the social project, all members of the community can participate in solving the problems of people with disabilities. It is aimed at improving the effectiveness of social, psychological, physical, social and household rehabilitation of persons with disabilities. The priorities of this

social project are promotion of social integration, socio-psychological adaptation, self-expression of persons with disabilities, development of their personal and social potential as members of the community.

The philosophy of the social project "DIFFERENT AND EQUAL" is built on the basis of mainstream disability, ideas of tolerance, respect for honour and dignity, reduction of stigma and devaluation of the problems of persons with disabilities in the community, increase of responsibility and readiness of community members to come to the aid of persons with disabilities, taking into account the difficulties of the war time.

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## PUBLIC EVENTS AS A MEAN OF DESTINATION PROMOTION

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***Abstract.** Tourism is often considered as a strategic economic development priority not only in areas with high numbers of domestic and international visitors but also in more remote and rural areas. Their ability to attract visitors is often limited by the number and the range of available infrastructure and other tangible and intangible resources. Even defined as development priority, tourism promotion is often underfinanced due to municipality budget priorities and often short-term focus whereas tourism promotion requires long term approaches. Less developed areas are also lacking overall understanding of various tourism impact forms and public officers face challenges communicating tourism marketing spendings to the public. These trends fit under the category of public events as a means of tourism promotion. Two cities qualifying as regional tourism destinations have prioritised public events as tourism promotion priorities. The aim of the research is to explore perception of public events as tourism destination promotion tools in regional tourism destinations. Research is a case study of public events as a means of tourism destination promotion in Bauska and Talsi city. Primary data has been obtained via semi-structured interviews with involved stakeholders representing public and private sector to develop practically applicable recommendations to other tourism destinations.*

***Keywords:** destination management, public communication, public events*

### **Introduction: the context of public events**

In the research regarding changes organisations and destinations have witnessed over the past decades M. Witzel identified the increasing importance of communication that influences every aspect of management, be it related to organisation's communication with customers or destination communication with tourists. It all relates to the ability of transferring information with a purpose to attract attention, influence opinion and providing solid grounds for further economic growth (Witzel, 2012). If organisations have several ways including traditional marketing communication ways to promote their products, tourism destination abilities are more limited. Besides, a highly competitive environment requires unique solutions. Increasing customer expectations towards diversity of destination experience have been pushing destination management organisations towards using cross-sectoral forms of promotion in order to raise awareness and attract visitors boosting visitor economy and increasing share of tourism economics into budgets. Public events have been considered to achieve this task and Latvia has been no exception. The research aims to explore how public events

are integrated into destination promotion activities based on two case studies of Bauska and Talsi municipalities in Latvia. Results are based on in-depth semi-structured interviews with involved stakeholders in the period between March 2022 and August 2023.

### **The concept of public events**

Although events themselves are not new in our civilization and have been long existing (Backman, 2018) starting with ceremonial events as earlier form of events and celebrations to mark important occasions (Cherry, 2013) to Royal celebrations showcasing their power and wealth and related events as the major form in Medieval and Renaissance periods (Mugnaini, 2006) to festivals in towns and cities with a purpose of bringing people together. It soon became a common tradition, especially in cities with closed trade links. Town Hall squares of mediaeval cities were turned into celebration places and residents could witness festive periods throughout the year. Also, in Latvia this has been a common tradition celebrating such events as, for example, Maygrave when Riga Town Hall Square was decorated with birch branches and wreaths, competitions, spring fairs, singing and dancing were organised. The main event of the celebration was the election of the Maygrave, accompanied by the music, the townspeople went in a magnificent procession out of the city on the green (Zeids, 1978). Also, in other European cities events were used as a form of gatherings and processions (Bolton 2023; Salmin, 2020). Later on, with the rise of the middle class led to an increase in social events such as balls, receptions, and gatherings while the industrial revolution marked the beginning of exhibitions as a new form of events in the late 19<sup>th</sup> century (Everts, 2016; Swift 2017).

In our times event management has become a vibrant industry with professionals specialising in various types of events, including corporate meetings, weddings, concerts, conferences, and sports events. Event management agencies are emerging as a new form of business aiming to deliver creativity through events. As a special form of events in the 20<sup>th</sup>-21<sup>st</sup> century, public events should be distinguished public events. With the term public events are understood events that are opened to the general public and are typically organised with the intention of attracting a broad audience (Abel & Bernsten, 2021) and with a purpose to make an impression (Janssen, 2015).

Forms of public events can differ – starting with festivals and regular celebrations to entertainment type events with concerts and performances to sport related public activities or educational events. Community based approach in the city development has brought up again public events as a form of community engagement stimulation seeing cities organising street fairs and community based social events (Gehl, 2018). Though, cities are also using events as a form of destination promotion attracting domestic and international visitors, enhancing



destination experience in a wide range of activities, ranging from traditional gastronomic events and festivals (Sotiriadis, 2015) to new destination products in a form of events. Events and their content are often used to measure destination experience among visitors (Lingeberzins & Jenzis, 2022). Thus, public events are often considered as a form of a tourism product that has a multiplicative effect on destination, promoting related services in the destination, primarily including the hospitality industry (Zlatanov, 2005). It is also important to emphasise this approach to the perception of a tourism destination product expands boundaries of understanding what are available tourism destination marketing concepts (Velikova, 2016).

### **Methodology**

In order to explore how public events are perceived and integrated into tourism destination promotion in Latvia, the research with 2 municipalities was carried out. Particular interest in the role of public events derives from broader research of regional tourism development strategies but particular two municipalities are of a particular interest in the area as self-promotion is often grounded in public events as a means of attraction.

Participants of the qualitative research for semi-structured interviews were selected after identifying involved stakeholders. Those include representatives in charge of tourism destination development, marketing communication and culture agencies from the respective municipalities, and hospitality service providers in municipalities. Totally 16 interviews were conducted in 2 municipalities with questions subordinate to main blocks of interest:

- planning of public events as a response to local resident well-being and life quality satisfaction in the municipality;
- using events as a mean of communication and attraction of visitors with a purpose to stimulate local tourism economy;

Conclusions from interviews with public and private sector representatives were summarised, developing general conclusions about a) understanding of the role of public events; b) factors influencing planning and preparation of events; c) possible shortcomings and areas of further development to balance needs of local inhabitants and destination visitors.

### **Public events in destination communication and development**

Following interviews there were identified common points of view among public and private sector representatives who are involved in the tourism destination marketing and can be considered as stakeholders. Conclusions are summaries regarding public events in the context of destination development and marketing communication activities.

**First**, it is a common understanding that regions in Latvia in order to reduce seasonality in tourism, which is largely influenced by the proximity of Riga, which does not contribute to the development of tourist accommodation, there are opportunities to create a conference and sports tourism offer by undertaking the organisation of national or even international events and competitions. However, it is common understanding these do not qualify as public events and would have minor economic multiplier effects on the destination ecosystem. Communication of such events is targeted at a narrow number of participants and other professionals related to the event but not to broader audience minimising ability to attract interest of possible visitors. There can be a certain misperception of the concept of a public event as the public sector tends to consider all events related to destination promotion rather than only those that are directly targeted to end consumers (tourists). As stated by Bauska municipality public sector representative, “We have general plan with culture activities in the city that we work on and do not distinguish in the preparation process if they will be interesting for tourists”.

More often the private sector during interviews questioned if municipal involvement in supporting events has been justified and analysed not only from the emotional but also practical, especially economically financial point of view. As commented by several catering segment representatives in both municipalities, “There is too little understanding that marketing is very expensive for single entrepreneurs and the aim of restaurants and cafes is to provide service and not to market destination”.

**Secondly**, there is an agreement between the private and public sector that public events are related to creative industries and activities. It is indicated here that both counties are particularly rich in cultural and historical heritage, which needs to be developed and used both in tourism and educational activities, as well as in the promotion of the area. Cultural events, art development, cultural tourism and other events can promote them among the most popular destinations for tourists in the future. In the future, the both municipalities plan to develop the cultural and historical heritage, revitalising old towns and improving the infrastructure and to develop the competences of the staff event management related staff in corresponding municipality departments, to continue supporting creativity in order to maintain a sufficient offer of cultural services for the residents. Both regions are confident about their future and will definitely highlight the need to look for innovative and creative solutions in the field of culture, which creates potential for new initiatives in various art sectors. This still requires a range of activities, that include the development of infrastructure and material and technical base of cultural institutions, recognition of tangible and intangible cultural and historical heritage, revitalising the old town areas, supporting development of cultural services, creating events and involving art industry. Overall conclusion is that cultural heritage should be considered as a

valuable resource for public event development. As commented by a representative in Talsi, “We are too hesitant about cultural values we all have and municipality needs to be more active in telling and promoting intangible and tangible values we have”.

**Thirdly**, there is a common agreement about the importance of planning in order to achieve positive social and economic goals with public events. Especially when it comes to economic benefits and more often by the representatives of private sector, it has been emphasised that the organisation of cultural events requires prioritisation of events (regional and local level events) and mutual coordination involving the private sector, coordination of marketing activities to avoid simultaneous events and avoiding competition between public and private sector. A separate offer for the young audience should be created, also exploring the possibility of organising events outside the traditional time, at night, looking for non-traditional solutions. There is a strong need to look for ideas for bringing cultural events to life throughout the year, develop digital solutions, event streaming options, and promote accessibility. As commented by Talsi municipality representative, “Times when just concerts and markets were enough have passed, now tourists are looking for more surprise and experience not seen before. It is more and more difficult to impress somebody in the times when innovation is everywhere”.

Perception of a single tourism and cultural product grounded in public events can be created. This is the **fourth** conclusion where there can be observed however no further arguments can be developed as overall respondents lack joint understanding on how public events should be developed as a tourism product. Major disagreements and points to be discussed are a) responsibility and the leaderships; b) financing procedure; c) prioritising visitors and thus boosting tourism economy vs. satisfying needs of local residents. Public sector representatives are overall more positive towards local resident’s needs rather than visitors, while the private sector emphasise the importance of visitor’s economic contribution. The sole point where both parties can agree is the lack of reliable statistical data and the need to develop methodology for measuring the economic impact of public events. As commented by a hotel manager in Bauska, “Everybody has some data and wants to prove they are right. The problem is that each of us often has different data creating different truths about the same thing”.

Though throughout the question about local residents, it is admitted that sustainable cultural tourism development is based on a significant principle of proportionality between the planned cultural activities, which are primarily intended for the residents of the county and secondarily, the public cultural events organised by the county can be used to create a cultural tourism offer for city guests. Despite the fact that the number of cultural events is relatively large, there are different opinions about the suitability of the ongoing public cultural events for the needs of tourists. Certain measures have promoted the attraction of tourists,

including promoting the attraction of foreign tourists, primarily from Lithuania and Estonia. However, taking into account the general trends, the most important tourist destinations in the regions of Latvia (Sigulda, Cēsis, Kuldīga, Liepāja, Alūksne, etc.) have also defined the development of events as a tourism priority. Therefore, it is necessary to expect an increase in competition in the offer of events, which can be particularly significant in attracting local tourists.

Overall, it is commonly agreed that the events that take place both in Talsi and Bauska and related districts can be considered a significant achievement in creating the destination's image and diverse tourism offer. For a more effective use of events as an activity promoting the attraction of tourists, a more in-depth coordination can be implemented, covering the entire county more broadly, ensuring the planning of events without overlapping, identifying the most important events and connecting them with purposefully identified target groups of tourists.

Although the organised events are an important part of the cultural environment of the city and its inhabitants, they can be used more widely in the implementation of destination marketing activities. An important prerequisite for the positioning of events as a tourist attraction is the cooperation and coordination of the municipal cultural administration, the tourist information centre and the organiser of events independent of the municipality, planning the event calendar and selecting events that can be positioned as attracting tourists.

As a potential area of development should be mentioned attraction of foreign tourists and development of service exports. For the attraction of foreign tourists, the measures taking place in the district are secondary, if the set goal of increasing the average length of stay and the number of overnight stays in the district is not achieved. Individual events that can also attract foreign visitors, or thematic events that are intended for certain target groups, can also be positioned in the Lithuanian and Estonian markets, in the segment of individual customers whose travel motivation is the events taking place at the destination. In order to ensure a larger number of foreign visitors, it is necessary to plan marketing activities that are focused on the course of the event itself and the content of the event.

As a specific area in case of Bauska municipality weddings have been mentioned as events, even though they also do not qualify as public events. Taking into account the event venues, guest houses, manors, scenic areas and cultural-historical heritage in Bauska County, weddings in Bauska County can be highlighted as a thematic customer segment. Although the number of customers decreased due to the consequences of the pandemic, the existing offer is adequate to highlight this as a destination advantage that also has a positive economic impact, as various tourism and hospitality services are used during weddings, including accommodation, catering, sightseeing, motivating activities. Celebrations that are held before the wedding (hen parties and bachelor parties) complement the wedding tourism offer with creative master classes, knowledge

of Latvian life, and active recreation. The diversity of service providers allows for the development of this direction as a tourism product, involving a wide range of tourism service providers, covering the entire county.

In order to develop an action plan, based on interviews it has been concluded there are two areas of tourism communication with related information delivery and communication goals.

*Table 1 Tourism destination communication*

<b>Tourism information and communication</b>	<b>Purpose of information and communication</b>
Motivation for choosing a destination, before the trip, thoughts about the trip and preparation	Tourism product news, events, event calendar, general thematic offers, uniqueness of destination. It can be implemented as public communication in the mass media in the form of news, in the county's tourism social networks, in the digital environment. Recognition of the brand.
Trip planning, selection of tourist attractions, choice of places, priorities, interests	Upcoming events, the most important holidays, product news, information on working hours, service prices, renewed information on the tourism website and advertising of the official tourism website, directing potential tourists to the website.

*Source: interview data  
n=16*

This summary shows that public and private tourism stakeholders have common views about the areas of communication and messages to be delivered to promote public events and to boost local tourism economy with the help of public events and it can be suggested to elaborate further action plans based on common agreements based on this mutual understanding.

## **Conclusions**

It can be concluded that public events are foreseen as a means of destination development among tourism destination management organisations and events are often seen as a preferred method of tourism development in regional destinations also by the private sector. However, there are areas where all stakeholders have to agree on coordinate actions in order to achieve their social and economic tasks:

First, it is a change of perception of public events from random cultural or social happenings into a part of tourism ecosystems. That requires development of events as a destination product, positioning it in the context of existing destination development strategies.

Secondly, the partnership approach to avoid competition between the public and private sector has a negative impact on the business environment. Private sector is expecting its involvement in public event planning.

Thirdly, development of public events respecting the needs of the domestic market but seeing the potential of an international audience. Ability of commercialising services for export can provide better opportunities for the local economy but at the same time it requires balancing with meeting local needs and satisfying local population with the content of public events.

Overall, it can be concluded that tourism destinations will be integrating more often public events in their destination promotion strategies, responding to changing expectations of domestic and international travellers where just “seeing” based tourism products in the destinations are not satisfactory.

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# MIERA KULTŪRĀ BALSTĪTAS MIKROVIDES SEKMĒŠANAS IESPĒJAS UN POTENCIĀLS IZGLĪTĪBAS IESTĀDĒS

## *Possibilities and Potential of Promoting a Microenvironment Based on a Culture of Peace in Educational Institutions*

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**Abstract.** Research reveals that the culture of peace is an actual phenomenon of people's social life, which is not only an approach to the prevention of violence and an alternative to the culture of war and violence but also creates a society that is probably only talked about in the context of utopia. In 2024, of course, it is not worth dreaming about utopia, however, educating the teaching staff about a micro-environment based on a culture of peace and its influence on the organization's operation contributes to the achievement of the goals of the learning process and a human-centered work environment. At the same time, an influential educational resource on cooperation and conflict resolution, decision-making, all human rights, communication, and information exchange is being developed. The publication highlights the possibilities of promoting a microenvironment based on a culture of peace, using the gamification process, and its pedagogical and psychological possibilities in improving the microenvironment of educational institutions in Liepāja, describing the empirical experience from case studies where was survey and game "Peace Please" sessions. The study aims to analyze the possibilities of using the gamification process based on the culture of peace in improving the microenvironment of educational institutions in Liepāja. The study results provide information about the game "Peace, please!" possibilities of use in educational institutions, indicating the essential thing common to the culture of peace and the organization's microenvironment. Problems specific to the micro-environment in educational institutions are identified and solutions are proposed for promoting a micro-environment based on a culture of peace.

**Keywords:** culture of peace, educational institution, educators, gamification, microenvironment

### **Ievads**

#### ***Introduction***

Miera kultūra ir sabiedrībā dominējošais vērtību, attieksmju, tradīciju, uzvedības un dzīves veidu kopums, kas balstās uz cieņu pret dzīvi un vardarbības izbeigšanu izmantojot izglītību, dialogu un sadarbību. Miera kultūra nav sinonīms pilsoniskajai sabiedrībai, bet ir cieši ar tās attīstību saistīts sociālās pieredzes komponentu kopums, kas akcentē uzsvaru uz cilvēku prasmēm, sociālajiem

procesiem un institūcijām, kas ļauj rast nevardarbīgus risinājumus nopietnu atšķirību gadījumā, kā arī aktualizē attieksmi un vērtības, kas veicina miermīlīgu uzvedību. Tieši izglītības sistēma ar tās institūcijām, kuros notiekošie procesi veido prasmes, attieksmes, vērtības un pie atbilstošiem apstākļiem veicina miermīlīgu uzvedību un konfliktu risināšanu, taču tā ir nepietiekami pētīta pedagoģiskās saskarsmes un sociālās mijiedarbības pilnveides kontekstā. Arī cilvēka attīstības pieejā tiek runāts par spēju veidošanu, kas sniedz iespēju sabiedrībai veidot tādu spēju kopumu, kas ļauj risināt dažādas sociālas un politiskas problēmas (Nussbaum, 2011). Pētījumā par dzimumu un pozitīvu sociālo mijiedarbību skolā, tiek uzsvērta spēju veidošanas pieejas saistība ar miera kultūrā balstītas mijiedarbības veidošanu, kur tiek skaidrots, ka izglītība par mieru jeb miera izglītība, pamatojoties uz konfliktiem, kas rodas skolas vidē, ir veids kā paaugstināt sociālo apziņu (Rodríguez-Martínez & Calvo, 2014) Daudzveidīgās pedagoģiskajā praksē identificētās savstarpējās saskarsmes problēmas rosina pievērsties izglītības institūcijas mikrovides pilnveides iespējām, pamatojoties uz pedagogu pieredzes bagātināšanu spēļošanas procesā. **Publikācijas mērķis** – analizēt miera kultūrā balstīta spēļošanas procesa pielietojuma iespējas Liepājas izglītības iestāžu mikrovides pilnveidē un rast atbildes uz **pētījuma jautājumu** – kā miera kultūrā balstīts spēļošanas process var ietekmēt mikrovidi izglītības iestādē?

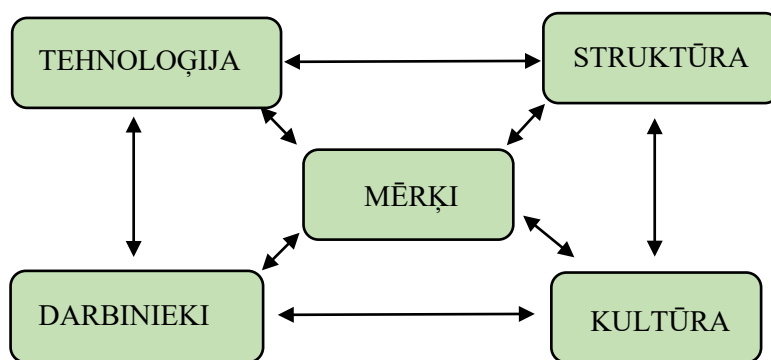
### **Teorētiskais pamatojums** *Theoretical background*

Praude un Beļčikovs (1996) iekšējās vides faktoru mijiedarbībā akcentē šādus elementus, kas atspoguļoti 1.attēlā un funkcionē nepārtrauktā saskarē:

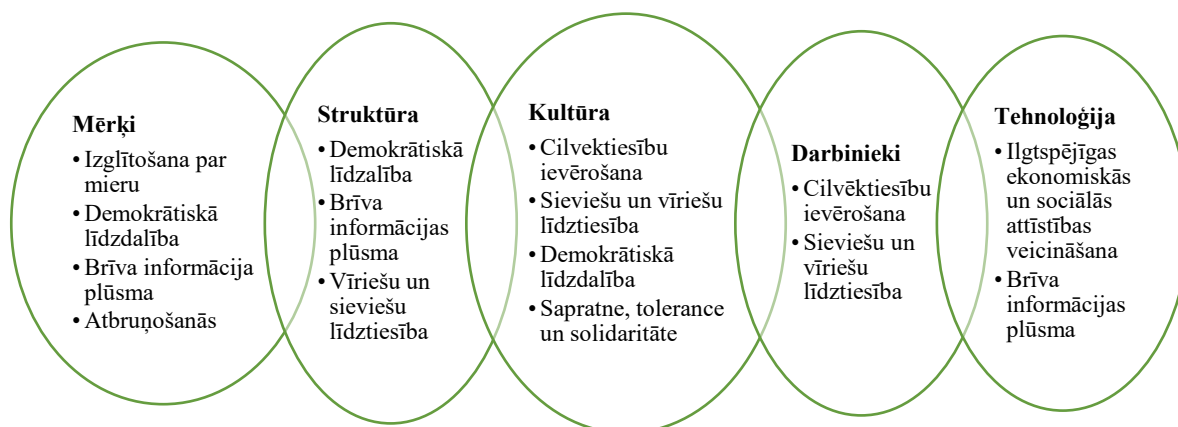
- mērķi (organizācijas stratēģija, politika, kārtējie uzdevumi);
- darbinieki (viņu zināšanas iemaņas, prasmes, uztvere);
- struktūra (darba dalīšana, funkciju sadale un izpilde);
- organizācijas kultūrvērtības, menedžmenta darba stils;
- tehnoloģija (iekārtu izmantošana, informācijas sistēmas).

Savukārt, jēdzienu “mikrovide” var skaidrot ar visu uzņēmumam tuvu dalībnieku mijiedarbību, kas pozitīvi vai arī negatīvi ietekmē organizācijas attiecības ar klientiem un spēju radīt vērtību (Kotler, Armstrong & Opresnik, 2018). Mikroklimatu grupā ir iespējams apzināti ietekmēt, regulēt, iesaistot grupā garīgi spēcīgas personības. Darbā mikrovide tiek saistīta ar miera kultūru. Mikrovides pieci elementi jeb ietekmējošie faktori ir savstarpēji saistīti ar miera kultūras astoņām jomām.





1.attēls. Uzņēmums mikrovides faktoru mijiedarbība (Praude & Beļčikovs, 1996)  
 Figure 1 The interaction of microenvironmental factors in the company



(Praude & Belcikovs, 1996)

2.attēls. Uzņēmuma mikrovides faktoru sasaiste ar miera kultūras jomām  
 Figure 2 Linking company microenvironmental factors to areas of culture of peace

Katram mikrovides elementam atbilstošas ir vairākas miera kultūras jomas. Analizējot shēmu 2.attēlā, var secināt, ka izglītības iestādes mikrovides veidošanā, iekļaujot miera kultūras jomas, veidojas personāla labbūtību veicinošs koncepts, kur tiek ievērotas cilvēktiesības, līdztiesība, brīva informācijas plūsma visu iesaistīto pušu vienota redzējuma nodrošināšanā un skaidru uzdevumu izpratnē, tiek veidota demokrātiska un uz mieru vērsta rīcība, kas attīsta ilgtspējīgu sociālo un ekonomisko attīstību.

Tomēr viens no būtiskākajiem mikrovides veidojošiem faktoriem ir kultūra, kas lielā mērā ietekmē arī visus pārējos faktoros. Kā Ārmstrongs un Tailers (2014) norāda – organizācijas kultūra ir modelis vērtībām, normām, uzskatiem, attieksmēm un pieņēmumiem, kas, iespējams, nav formulēti, bet veido vidi, kā cilvēki organizācijās uzvedas un kā lietas tiek darītas. Organizācijas kultūras nesēji ir organizācijas darbinieki un vadība, tomēr izšķirošā loma kultūras uzturēšanai un attīstīšanai ir organizācijas vadībai. Tieši tāpēc liela daļa pētījuma tika veltīta izglītības iestāžu vadītāju redzējumam un izpratnei par mikrovidi organizācijā.

Lai gan varētu šķist, ka spēļu spēlēšana ir lieka laika izšķiešana, tomēr dažādi spēļu elementi var veicināt ne tikai motivāciju un interesi par dažādiem aspektiem, bet arī emocionālās un sociālās pārmaiņas attiecīgajā kontekstā. Spēle “Mieru, lūdzu”, kas tiek izmantota pētījumā kā rīks, lai ne tikai rosinātu izglītības iestādē domāt par mikrovidi un vērtībām, bet arī lai analizētu spēļošanas izmantošanas iespējas, runājot par nozīmīgām tēmām un izglītības procesos iesaistīto personu labbūtības vecināšanu, sevī apvieno galda, kāršu, nopietno, izglītojošu, sarunu, kooperatīvo spēļu veidus un vairākus spēļu elementus, kā piemēram, punkti, personifikācija, sociālās iezīmes, izaicinājumus, uzdevumus un stāstus, kas norāda uz to, ka tā izmantojama kā spēļošanas rīks. Spēle “Mieru, lūdzu” tapusi no 2020. līdz 2022. gadam projekta “Changing the Game: Developing a Culture of Peace in Organisations” (tulk. no angļu valodas “Mainot spēli: Attīstot miera kultūru organizācijās”) rezultātā, kas finansiāli atbalstīts Erasmus+ pieaugušo izglītības programmā, apvienojoties piecām starptautiska mēroga organizācijām no Latvijas, Polijas, Nīderlandes, Grieķijas un Anglijas. Spēles mērķis ir rosināt sarunas starp spēlētājiem par miera kultūras attīstību savās organizācijās, aplūkojot dažādas ar darba vidi saistītas situācijas un iespējamās cilvēku rīcības vai reakcijas uz tām. Spēle sastāv no 88 kārtīm, no kurām 16 ir izaicinājumu kārtis, 64 darbības kārtis un 8 panikas kārtis. Spēlētāju mērķis ir pārvarēt trīs izaicinājumus, izvēloties vienu līdz divas atbilstošas darbības kārtis, kas atrisinās nejauši izvēlēto situāciju jeb izaicinājumu. Izaicinājumi ir sadalīti astoņās jomās, kas pielāgotas darba videi un ir balstītas uz Ģenerālās asamblejas pieņemtajām miera kultūras darbības jomām.

Pamatvērtības/miera izglītība

- Izglītošana par mieru

Komandas darbs un sadarbība

- Sapratne, tolerance un solidaritāte

Lēmumu pieņemšana

- Demokrātiska līdzdalība

Saziņa un informācijas apmaiņa

- Brīva informācijas plūsma

Konfliktu navigācija

- Atbrūņošanās

Cieņa pret cilvēktiesībām

- Cilvēktiesību ievērošana

Ietekme un izpratne par starpsavienojumu

- Ilgtspējīgas ekonomiskās un sociālās attīstības veicināšana

Vienlīdzība un reprezentācija

- Sieviešu un vīriešu līdztiesība

**3.attēls. Spēlē “Mieru, lūdzu” noteiktās jomas salīdzinājumā ar Ģenerālās asamblejas noteiktajām miera kultūras darbības jomām**

**Figure 3 The areas defined in the game “Peace Please” are compared to the areas of activity of the culture of peace defined by the General Assembly**

## **Pētījuma metodoloģija** ***Research Methodology***

Lai analizētu miera kultūrā balstīta spēļošanas procesa pielietojuma potenciālu Liepājas izglītības iestāžu mikrovides pilnveidē – tika veikts empīrisks gadījuma pētījums, kurā tika īstenotas četras spēļošanas sesijas, izmantojot spēli “Mieru lūdzu”, intervijas ar trīs izglītības iestāžu vadītājiem un aptauja, kura piedalījās 17 respondenti.

Gadījuma pētījums ir empīrisks pētījums par mūsdienu parādību, kas izmantots reālās pasaules kontekstā, īpaši ja nav skaidri redzama robeža starp parādību un kontekstu (Yin, 2009.) Šāda pētniecības pieeja izvēlēta, pamatojoties uz to, ka spēļošanas izmantošanai izglītības iestāžu mikrovides uzlabošanai nav iepriekšēju pētījumu, kuri būtu saistīti ar miera kultūru. Jāuzsver arī tas, ka spēle “Mieru, lūdzu” ir jauna, tās aprobācija nav notikusi attiecīgajā kontekstā. Šīs spēles izmantošana pētījumā uztverama kā reālās pasaules situācija, kurā tiek pētīts mūsdienu fenomens – miera kultūrā balstīta mikrovide.

## **Pētījuma rezultāti** ***Research results***

Pētījuma ietvaros tiek veikta iesaistīto pedagogu aptauja, lai izvērtētu ne tikai mikrovidi konkrētajā organizācijā, bet arī, lai analizētu, kā pedagogu rīcība ikdienas darba situācijās saistāma ar miera kultūru. Tika aptaujāti 17 respondenti, kuri intervijā atbildēja uz astoņiem jautājumiem. Visi respondenti pēc aptaujas iesaistījās arī spēles “Mieru, lūdzu” spēlēšanā.

Visi respondenti ir sievietes ar vidējo vecumu 48,6 gadi, no kuriem lielākā daļa jeb 58% ir vecumā no 47 līdz 56 gadiem ar darba stāžu vidēji 8,7 gadi.

Aptaujā miera kultūras kontekstā tiek piedāvāti divi situāciju bloki, kas atspoguļo mikrovides definējošas norises darba vietā un respondentu rīcību, kas balstīta vai, tieši pretēji, nav balstīta miera kultūrā, aicinot izvērtēt savu darba vidi un rīcību kategorijās – atbilst pilnīgi, atbilst daļēji, novērojams reti, neatbilst nekad un nekad, dažreiz, bieži, vienmēr. Šie divi jautājumu bloki palīdz izdarīt secinājumus, par to, kā pedagogu rīcība ietekmē mikrovidi un vai jautājuma atbildēm par ar mikrovidi saistītām situācijām izglītības iestādē ir savstarpēja saistība ar miera kultūrā balstītu rīcību. Šajā jautājumā norādītās situācijas ir aizgūtas no spēles “Mieru, lūdzu” un no publikācijas autoru darba pieredzes.

Analizējot iegūtās atbildes, tiek secināts, ka lielā mērā iesaistītie pedagogi rīkojas miera kultūrā balstīti, un arī mikrovide organizācijās vērtējama kā pozitīva, tomēr vērojamas dažādas problēmsituācijas, kuras risinot un tām pievēršot uzmanību savlaicīgi, būtu iespējams mikrovidi uzlabot. 1. tabulā redzams, kuri apgalvojumi no jautājumiem ir miera kultūrā balstīti un arī respondentu atbilžu statistikā vērojami ar pozitīvu tendenci, kā arī tie

apgalvojumi, kuri norāda uz potenciālām problēmsituācijām, balstoties uz aptaujas atbilžu rezultātiem.

1. tabula *Pedagogu aptaujas atbilžu analīze miera kultūrā balstītas mikrovides kontekstā*  
Table 1 *Analysis of teacher survey responses in the context of a microenvironment based on a culture of peace*

<b>Miera kultūrā balstītas mikrovides iezīmes</b>	<b>Atbilde/procenti</b>
Uzskatu sevi par pilnvērtīgu komandas locekli	Atbilst pilnīgi – 94,1%
Man ir patīkama komunikācija ar vadību	Atbilst pilnīgi – 94,1%
Man ir labas attiecības ar kolēģiem	Atbilst pilnīgi – 82,4%
Es cienu savus kolēģus	Atbilst pilnīgi – 100%
Jaunajiem darbiniekiem tiek sniegts atbalsts	Atbilst pilnīgi – 88,2%
Konfliktsituācijas manā darba vietā tiek pārrunātas un risinātas	Atbilst pilnīgi – 94,1%
Man ir pieejama visa nepieciešamā informācija par organizācijas mērķiem, uzdevumiem, nostāju, vīziju utt.	Atbilst pilnīgi – 94,1%
Es esmu izpalīdzīgs pret jaunajiem kolēģiem	Vienmēr – 76,5%
Es saku: "Dažreiz vardarbība ir nepieciešama"	Nekad – 94,1%
Es aicinu uz nevardarbīgu rīcību.	Vienmēr – 70,6%
Es meklēju vainīgo un norādu uz viņu visu priekšā.	Nekad – 94,1%
Es cenšos darīt tā, lai pārējie izskatītos slikti un cilvēki vērstos pret viņiem.	Nekad – 94,1%
<b>Negatīvas mikrovides iezīmes un potenciālas problēmsituācijas</b>	<b>Atbilde/procenti</b>
Man ir ienākusi prātā doma pamest darbu kāda kolēģa vai vadības attieksmes dēļ.	Novērojams reti – 23,5%
Kolektīvā ir tādi kolēģi, kas izteikti izrāda savu pārākumu.	Atbilst daļēji – 29,4%
Darba kolektīvs ir sadalīts pa grupām, nav vienotības.	Novērojams reti – 52,9%
Es piedāvāju komandā veidus, kā būt efektīvākiem.	Dažreiz – 41,2%
Problēmsituācijā es nerīkojos un klusēju, varbūt tas beigsies.	Dažreiz – 41,2%

*n=17*

Atbilstoši respondentu sniegtajām atbildēm, var secināt, ka spēļošanas procesā iesaistītajās izglītības iestādēs vadītājs un vadības komanda īpašu uzmanību pievērš darbinieku saliedētībai un komunikācijas veidošanai kolektīvā, kā arī konfliktsituāciju risināšanai. Arī sarunās ar organizāciju vadītājiem tika izcelti komandas saliedēšanas pasākumi, kuru laikā tiek veidota atbalstoša, neformāla un pozitīva komunikācija, ļaujot darbiniekiem atvērties un veidot uz uzticēšanos balstītas attiecības. Īpaši uzsverama ir nevardarbīga un cieņpilna attieksme, kas veidojas ne tikai dzīves gaitā, bet arī vadītāja nostājas ietekmē, kas demonstrē atbilstošu attieksmi un sniedz uzskatāmu mijiedarbības piemēru, kas vērojams ikdienā.

Tomēr ļoti būtiskas ir saskarsmes situācijas, kuras norāda uz iespējamiem trūkumiem mikrovidē, neraugoties uz salīdzinoši nelielo procentuālo respondentu skaitu, kas tos ir atzīmējuši. Tieši šīs ir situācijas un darbinieku rīcība, ko

vadītājam būtu nepieciešams fiksēt, pievēršot pastiprinātu uzmanību un rīkojoties tā, lai ikviens kolektīvā strādātu pie šādu situāciju novēršanas darba vidē. 1. tabulā arī vērojamas lielāku izglītības iestāžu problēmas, kurās izveidot saliedētu kolektīvu ir daudz sarežģītāk. Lai gan ikvienas iestādes efektīvs vadītājs rūpējas par komandas saliedēšanas pasākumu esamību, tomēr papildus vērtība jāvērs šādu aktivitāšu saturiskajam aspektam, nodrošinot iespēju komunicēt un iepazīties tuvāk arī tiem darbiniekiem, kuri ikdienu nestrādā roku rokā. Nenoliedzami, liela nozīme ir arī darbinieku atlases procesam, uz ko norāda aptaujā vērojamā tendence, ka nereti kolektīvā ir kāds, kurš izteikti izrāda pārkumu. Darbinieku personību, vecuma un saderības nepietiekama izvērtēšana var novest pie konfliktsituācijām, kuras neadekvāti risinot, tās tiek saasinātas. Būtiski izglītības iestādē izveidot tādu komunikāciju darbinieku un vadības komandas starpā, lai ikviena problēmsituācija, kas ietekmē ne tikai tiešo darba pienākumu veikšanu, bet arī mikrovidi, tiktu pamanīta, tai sekotu atbilstoša, miera kultūrā balstīta izpratne un rīcība.

Pētījuma ietvaros tika īstenotas četras spēles “Mieru, lūdzu” sesijas. Spēļu sesiju mērķis bija novērot pedagogu attieksmi pret spēlošanu kā metodi, izdarīt secinājumus par konkrētās spēles izmantošanas ieguvumiem organizācijas mikrovides pilnveidē, analizēt spēles gaitu, lai novērotu miera kultūrā balstītas rīcības esamību. Pēc katras spēles sesijas katrai grupai tika dotas 10 minūtes laika, lai reflektētu par spēles norisi, identificētajām izjūtām un spēles pielietošanas iespējām. Būtiski atzīmēt, ka katrā spēles sesijā lielākā daļa dalībnieku ieradās ar izteiktu skepsi par spēli, padarot to par joku. Tomēr jau pēc pirmā spēles posma skepse zuda, un gandrīz ikviens dalībnieks atzīst, ka spēle liek domāt par savas organizācijas mikrovidi, ikkatra iesaistītā rīcību dažādās situācijās un par iespēju rīkoties miera kultūrā balstīti.

Pozitīvi vērtējama spēļu dalībnieku cieņpilnā attieksme vienam pret otru. Izmantojot spēļu sesijas, bija iespēja novērot, kā komandā tiek pieņemti lēmumi. Var konstatēt, ka lēmumu pieņemšanā katrā grupā ir kāds, kas uzņemas vadību, bet kāds, kurš savu viedokli pat nepiedāvā, ļaujot grupas līderim vadīt procesu. Katrā spēles sesijā bija vērojamas dalībnieku saturīgas un jēgpilnas diskusijas. Tieši spēļu laikā bija jūtama gan dalībnieku savstarpēja mijiedarbība, gan pretstāve un kāda konkrēta cilvēka nepamatota pārkuma izrādīšana, nedodot iespēju visiem izteikt savu viedokli. Lai gan tas nebija vērojams visās spēlēs, tomēr kopā ar skepsi, steigu, un emocionālu norobežošanos no reālās vides, visu pārvēršot jokā, pusē no spēļu sesijām bija viens vai vairāki dalībnieki ar šādām uzvedības izpausmēm.

## **Secinājumi** *Conclusions*

1. Izvērtējot empīriskā pētījuma respondentu aptaujas un spēles “Mieru, lūdzu” sesijas datus, var apgalvot, ka, pirmkārt, iesaistītās personas ikdienā darba vidē rīkojas miera kultūra balstīti, tomēr kopējā izglītības iestādes mikrovidē ir veicami uzlabojumi, kuri prasa, galvenokārt, vadības konkrētu rīcību ar pārējo darbinieku mērķtiecīgu iesaisti.
2. Otrkārt, spēles “Mieru, lūdzu” norises nosacījumi ļauj dalībniekiem paraudzīties uz jau notikušām situācijām darba vidē no malas un reflektēt par savu un citu kolēģu rīcību tajās, atklājot potenciālos resursus mikrovides optimizēšanai. Augstu vērtējama spēles situāciju personificēšanas iespēja, kas ļauj tai piešķirt personīgu jēgu un saskatīt pienesumu darba vidē.
3. Jāatzīmē arī tāds fakts, ka tikai mazākā daļa dalībnieku bija gatavi spēli spēlēt atkārtoti, iedziļinoties lēmumu pieņemšanas stratēģijās un savas izglītības iestādes mikrovides izvērtēšanā, kas liecina par to, ka šāds spēļošanas process par tik nozīmīgu tēmu ir novitāte pedagogu vidū, pret ko attiecas ar skepsi un noraidījumu, vēl neredzot tā pievienoto vērtību.
4. Miera kultūras jomu mērķtiecīga un apzināta iekļaušana izglītības jomā un arī saturā, apzinoties izglītības nozīmi un ietekmi, būtiski var veicināt nākotnes sabiedrības izglītošanu un nevardarbīgu rīcību ikvienā dzīves jomā.
5. Miera kultūrā balstīta organizācijas mikrovide rada optimālus darbinieku mijiedarbības apstākļus, kuros ikkatrs tās dalībnieks var justies droši, novērtēti, rīcībspējīgi, atbildīgi, iesaistīti, nozīmīgi un, ne mazāk svarīgi, motivēti.
6. Spēles "Mieru, lūdzu" aktīva izmantošana izglītības iestādes darbībā veicina izpratni par miera kultūru un daudzveidīgo profesionālo prasmju pilnveidi. To apliecina pētījumā iesaistīto pedagogu pozitīvās atsauksmes pēc spēles "Mieru, lūdzu" spēlēšanas.
7. Pētījuma datu analīzes rezultātā var secināt, ka miera kultūrā balstīts spēļošanas process pilnveido izglītības iestāžu mikrovidi, sākotnēji rosinot savstarpējo dialogu, veidojot izpratni un sniedzot iespēju saskatīt izaugsmes iespējas un iekšējos resursus mikrovides uzlabošanai.

## **Kopsavilkums** *Summary*

In the paper, the authors provide information about microenvironments in organizations, including their components and the responsibilities of different parties in the work process. It has been linked with areas of the Culture of Peace designated by UNESCO. The authors summarize the main information about gamification and the game “Peace Please,” which has been utilized in research

conducted in Liepāja, Latvia. In the research, case studies have been employed due to the uniqueness of the situation – a card game that not only fosters cooperation and a culture of peace but also offers an opportunity to reflect on the microenvironment within organizations. Since the game is novel, there is no prior validation in the specific context, and there is a scarcity of research on the microenvironment based on a culture of peace. The primary aim of the research is to address the question – how can a gamification process rooted in a culture of peace influence the microenvironment in an educational institution? To address this question, a survey was conducted regarding the microenvironment in educational institutions and teachers' actions in various work situations, aiming to assess the overall situation and draw conclusions – whether the microenvironment in schools is conducive and whether teachers operate in accordance with the culture of peace. Additionally, four sessions of the game “Peace Please” were conducted, involving all teachers who participated in the survey, allowing them to play the game and share insights on the topic - Possibilities and Potential of Promoting a Microenvironment Based on a Culture of Peace in Educational Institutions. The main conclusions enable us to assert that the game process rooted in the culture of peace enhances the microenvironment of educational institutions, initially fostering dialogue, fostering understanding, and providing opportunities to identify areas for enhancing the microenvironment.

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# MANAGEMENT PRACTICES: SHAPING EMPLOYEE SATISFACTION AND COMMITMENT IN LARGE GERMAN COMPANIES

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**Abstract.** *The rapid evolution of the political, economic, and social landscape has generated increased interest in understanding the contextual application of Management styles and behaviours toward employees. In this context, organizations must comprehend and assess employee satisfaction to enhance productivity and realize their strategic and economic goals. Therefore, this study aims to investigate the prevailing and significant Management behaviours toward employees in large German companies and their impact on employee satisfaction and job commitment. To achieve the research objective, the study will employ a qualitative method to explore Management behaviours toward employees. Data was collected through interviews with randomly selected Managers from different companies and departments. The study aims to uncover discrepancies or variations in employee expectations regarding Management behaviour. The findings will provide a better understanding of the most prevalent and significant Management behaviours toward employees in large German companies and their impact on employee satisfaction and job commitment. The results will be valuable to Management in adopting suitable leadership styles and improving employee satisfaction, leading to increased productivity and organizational performance. The research will contribute to the existing body of knowledge in the field of Management and human resource Management by providing insights into the impact of Management behaviours on employees. It will also offer recommendations to Management on how to enhance employee satisfaction and job commitment, leading to improved organizational performance. In conclusion, this study will investigate the prevailing Management behaviours toward employees in large German companies and their impact on employee satisfaction and job commitment.*

**Keywords:** *employee commitment, employee expectations, employee satisfaction, management practices in large German companies, leadership approaches, organizational performance*

## Introduction

Employee satisfaction is an important aspect of organizational performance and has a direct impact on the financial well-being and development of a business. As such, the measurement and analysis of employee satisfaction have become increasingly important for organizations. However, there are different methods and approaches to measure employee satisfaction, and it is important to identify the



most effective methods for different Management styles. The goal of this scientific paper is to identify the most applicable Management Styles, their measurement and validation in large German companies as also how the evaluation results have been used to support employee and business development.

Examining the application, evaluation, and understanding of different Management styles is essential for several reasons. Firstly, it helps companies to align their overall business goals. Different Management styles should have a flexible manner and should be applied differently in specific business situations, considering the overall economic and political situation that may influence the company. By connecting the application and evaluation of different Management styles to key business objectives, employees can be guided in the correct direction, making it more understandable to them.

Secondly, it improves communication and employee focus. Management styles and their evaluation represent a particular form of communication within the company, and there should be a clear explanation and communication with employees about the suitability of the Management style application and the outcomes of the evaluation results.

### **Materials and Hypothesis of Management style implementation and evaluation**

Numerous principles and hypotheses concerning Management styles have been identified, formulated, and systematically examined through diverse market research efforts. These include the practical application, evaluation, and impact on both employees and overall business development. The researcher has diligently categorized these insights into five distinct classifications. A thorough exploration of each hypothesis, coupled with a clear understanding, holds the potential to reveal novel perspectives and contribute to the existing body of knowledge within the field of Management studies (Gareth & Jennifer, 2019).

In the modern working society, the concepts of "Agility" and "Business Agility" are central, as stated in the hypothesis that declares them to be crucial topics (Wieland & Wallenburg, 2012). Understanding how companies define, practice, and measure agility is paramount. The analysis of this hypothesis explores the associated challenges and benefits, identifying best practices instrumental for companies aiming to enhance or adopt agility.

In the realm of Time and Resource Management, various hypotheses emphasize individual team needs. One hypothesis states that "Each team has its own needs" (Huselid, 1995) while another asserts that "Managers do not have enough time to apply the correct Management styles" (Deeb, 2016). Managers are tasked with fostering self-awareness and motivation among team members, navigating time constraints, and financial limitations for employee development. This exploration unravels team dynamics, offering insights into Managerial skills,

efficient time Management, and cost-effective strategies for employee growth within limited resources (Spayd & Madore, 2020).

The Self-Reflection category introduces the notion that Managers should analyse and define their competencies for effective task execution. The hypothesis suggests that "One should make an analysis and define its competencies of a Manager as a set of knowledge and abilities to use these qualities for effective executing of particular tasks according to given authority and general expectations" (Mika, 2001). This delves into self-awareness in companies, exploring how Managers are sensitized to their appearances and the existence of training and development concepts (Wisdom, 2020).

In Self-Actualization, Employee Motivation, and Development, the hypothesis suggests that "Companies should invest time and money in employee development to support employee satisfaction." (Gehaelter bei Bosch, 2022). Another hypothesis states that "People are driven by the 'self-actualization' concept" (Lawler, 1994). The research explores four basic drives underlying employee motivation, shedding light on how Managers comprehend, and support employee motivation, self-awareness, and methods used to address individual needs while balancing team goals.

Exploring Management Styles, the hypothesis posits a direct correlation between different styles and business development. It identifies three worldwide categories: autocratic, democratic, and laissez-faire (Capon, 2008). Another hypothesis reveals that "Large German companies use all three Management styles to keep the company profitable and growing" (Lussier, 2020). Analysing these hypotheses unveils prevalent Management styles in German companies, shedding light on how Managers lead teams and perceive styles, contributing to understanding the correlation between style and employee satisfaction and guiding strategies for employee development in German companies.

## **Research Methodology**

### **Hypothesis analysis and grouping, questionnaire establishment, pilot interview establishment and conduction, interview assessment**

This scientific paper employed a preliminary research method involving a comprehensive literature review and analysis of previously published scientific articles. Subsequently, exploratory research was conducted to gain a general understanding of the current state in the specific research field on Management styles applied in large German companies, their analysis, and their impact on employee satisfaction, development, and the overall company.

All data were synthesized and analysed based on existing information from various published sources. Following the definition of the research question or problem, a literature search was carried out, and data were extracted from carefully

selected and evaluated scientific articles. The conclusions and findings were drawn from the data analysis.

Following the data analysis, the researcher formulated several hypotheses, which were carefully grouped into categories presented in the paper. Grouping hypotheses was a crucial step serving various important purposes: it provided a structured and organized format for presenting research findings, maintained a logical flow of information, facilitated easy comparison between different sets of ideas or variables, focused on specific aspects of the research question, and made data analysis and interpretation more manageable in a systematic manner (Creswell, 2013).

After grouping the hypotheses, the interview questions were systematically extracted to ensure alignment with research objectives and provide valuable insights. The researcher ensured a clear understanding of key concepts and relationships within each category. Next, key themes or patterns from each group of hypotheses were extracted, ensuring the inclusion of specific Management practices, experiences, and perceptions on Management style and organizational dynamics. Subsequently, open-ended questions were generated, allowing participants to provide detailed and nuanced responses, linked to one or more hypotheses. These questions explored different perspectives or introduced new ideas, contributing to the depth of qualitative data (Yin, 2018).

Upon generating the interview, pilot interviews were conducted with three Managers from large German companies. The primary objectives of these pilot interviews were to iteratively refine the interview questions based on participant feedback, identify and address any ambiguities or challenges in comprehension, and discern the general direction of responses (Saldana, 2009). The insights from these pilot interviews will be elaborated upon in greater detail in the subsequent sections of this scientific paper.

## **Exploratory Research Results**

### **Exploring Management Styles in Large German Companies: A Pilot Interview Analysis to Identify Commonalities and Differences in Application and Effectiveness**

The research delves into the intricacies of Management styles and their impact on employee motivation, alongside the cultivation of self-awareness among Managerial personnel. A significant challenge encountered by the researcher involved devising effective measurement methods for these aspects within companies.

The primary objective is to discern how diverse Management approaches influence employee motivation and to investigate how companies measure and interpret these Management styles. The complexity of measuring intangible

elements such as Management styles and the development of self-awareness presented notable challenges throughout the research process.

In essence, the findings shed light on the relationship between Management styles, self-awareness, and employee motivation, elucidating the methods employed by companies to measure and enhance these pivotal aspects of organizational functioning.

### **1. Agility and Business Development in large German companies**

Exploring the insights of three professionals in the Agility and Business Development field revealed a mix of shared and differing viewpoints, shedding light on how companies interpret and implement agility in today's working environment.

All three interviewees unanimously emphasized the vital importance of agility in today's workplaces. Interviewee 1 highlighted the practical side, focusing on collaborative problem-solving with customers, while Interviewee 2, emphasizing the need to navigate the unpredictable terrain of business, remarked, *"Agility is our compass in navigating the unpredictable terrain of business. It's about optimizing our resources to stay ahead of the curve and seize opportunities as they arise,"* (H. Seidel, personal interview, November 11, 2023) and Interviewee 3 underscored agility's key role in navigating unpredictable business situations and optimizing resource use.

The significance of promoting and practicing agility resonated across all three interviews, with a shared belief that autonomy, freedom, and aligning employee decision-making with company goals are essential.

Interestingly, none of the companies currently employ a formal system to measure agility. Interviewee 1 envisioned potential future measurements, while Interviewees 2 and 3 linked successes to agile project outcomes without specifying Key Performance Indicators (KPIs).

A recurring theme in the discussions was the encouragement of a culture of agility. All three interviewees advocated for creative thinking and the willingness to take on tasks beyond job descriptions. Two interviewees highlighted the importance of recognizing employee successes and added value as ways to reinforce the benefits of an agile approach. In contrast, one interviewee promoted quick role changes for young employees and stressed the strategic allocation of resources within the company.

Concerning the promotion of agility, challenges within small organizations due to existing processes were cited by the majority of interviewees, while Interviewee 2 emphasized the need to further simplify structures to encourage employees to use their energy according to their needs.

In summary, these insights offer a more comprehensive understanding of how agility operates in organizations, revealing both shared principles and unique perspectives.

## **2. Time and Resource Management in large German companies**

Exploring how three Managers of large German companies manage time and resources in their teams reveals a mix of shared and different ideas. The goal was to understand how teams function, the role of Managers in motivating employees, the challenges in managing time, and the financial limitations for employee development.

All interviewees agree that teams work best when they have a mix of people with different skills. One person talked about how their teams collaborate across different areas, like technical and marketing. Another emphasized the importance of having people with technical, creative, and consistent skills for successful teamwork. All interviewees stated that their companies maintain a positive atmosphere. They believe that even when facing challenges, working together to solve problems keeps everyone optimistic.

Flexibility also emerges as an important topic. Being flexible is crucial to ensure each person's needs align with what the whole team is trying to achieve. All interviewees emphasize that focusing on results and giving employees the freedom to plan their work helps in this alignment.

Further acknowledgment is that investing time in tasks related to employees is crucial. All Managers spend a considerable amount of time on Human Resources and leadership responsibilities, holding regular meetings with employees to discuss personal interests and further development. The challenge lies in trying to be available all the time when employees need support.

Generally, there is a positive atmosphere in all the companies; however, tension may arise due to fast changes in the team and work overload.

## **3. Management Self-Reflection in Large German Companies**

Exploring the dimension of self-reflection within Managerial roles through the insights of three Managers provides an overview of how individuals perceive and enhance their competencies. When asked about effective self-reflection, two interviewees acknowledged the challenge of being the sole judge of their performance. They underscored the crucial role of external perspectives, particularly those of their employees.

In terms of feedback, all actively seek input from employees through meetings and surveys, despite recognizing the difficulty of obtaining honest feedback, especially from newer team members. Each company also conducts mandatory employee surveys that serve as a structured platform for evaluating the company and Management at all levels. The companies place a strong emphasis on analysing and evaluating the survey results, complemented by various tools and workshops for employee development.

The third interviewee expressed a high level of confidence in their ability to reflect on personal competence, highlighting their development through

supervision circles and personal coaching sessions. These coaching sessions, backed by the company, delve into various aspects of People Management. Furthermore, the interviewee mentioned the importance of learning to allocate time for preparation and follow-up, incorporating self-analysis and coaching analysis into their reflective practices.

In summary, all Managers recognize the significance of self-reflection in their roles. While two Managers rely more on external perspectives, especially from employee surveys, the third interviewee combines personal coaching and self-analysis. It is noteworthy that all companies utilize various tools, including 360-degree feedback, to foster continuous improvement and awareness of Managerial actions. These insights contribute to a broader understanding of how self-reflection is implemented within Managerial practices, providing valuable perspectives for organizational development.

#### **4. Self-actualization, Employee Motivation, and Development in Large German Companies**

While exploring this category, it became evident that all three Managers share a unified perspective on the significance of employee development in fostering satisfaction and contributing to the success and stability of the company. They collectively emphasize the need to invest time and resources in employee development to adapt to the ever-changing business landscape and align with the concept of "self-actualization."

The factors influencing an employee's willingness to develop align closely with all responses. Managers stress the importance of tolerance for mistakes, recognizing and rewarding good performance, and providing financial benefits and status to support employee development. Additionally, one Manager draws attention to the social framework and the impact of personal situations on an employee's ability to engage in development opportunities.

Strategies for developing self-confidence and self-motivation also exhibit commonalities. All Managers underscore the significance of giving employees autonomy and space, allowing them to make decisions and assume entrepreneurial roles. One interviewee emphasized, *"Empowering employees with autonomy and space to take on entrepreneurial roles is foundational. It fosters self-confidence and self-motivation, crucial for individual and organizational growth"* (G. Sevki, personal interview, November 16, 2023). Additionally, conducting development dialogues with employees at least once a year to collaboratively formulate development plans and identify competencies is deemed important.

Regarding the measurement of the success of employee development initiatives, all Managers acknowledge the importance of metrics such as age, diversity, and a sense of belonging. However, there are slight variations in their approaches, with the first two Managers emphasizing the tracking of completed

training programs, while the last Manager considers more global metrics related to diversity and a sense of belonging.

Lastly, in assessing the four primary drivers of motivation, each Manager expresses familiarity and assigns importance to each drive, albeit with slight variations in ratings. Each Manager acknowledges the presence of these drives in their employees and underscores their importance in different ways.

In summary, all Managers align on the fundamental importance of employee development and share common views on several key aspects.

## **5. Management Styles applied in large German companies**

The analysis of the 5th category delves into the impact of different leadership styles on a company's development. All Managers unanimously agree on the global recognition of three primary Management styles: autocratic, democratic, and laissez-faire. Interestingly, they highlight a unique approach in large German companies that integrates all three styles for profitability and growth.

Concerning their respective companies, all Managers affirm the application of all three leadership styles. One Manager observes a tendency among younger employees to lean towards autocratic leadership, possibly due to a preference for explicit instructions and avoidance of responsibility. The other two Managers acknowledge the promotion of democratic leadership in their company but recognize individual Managers who gravitate towards autocratic or laissez-faire styles based on their personalities.

Flexibility in applying leadership styles emerges as a common trait shared by all interviewed Managers. They recognize the need to adapt to individual situations, understanding that different employees may require varied approaches for effective leadership. Furthermore, all Managers emphasize the importance of self-reflection and timing in deploying the appropriate leadership style.

In summary, all Managers share a commitment to flexible leadership, incorporating democratic and laissez-faire styles. They also recognize the influence of individual Manager personalities in the application of leadership styles within their companies.

## **Conclusions**

This study has undertaken a comprehensive exploration of Management styles and their implications on employee satisfaction, development, and overall business performance within large German companies. The study aimed to identify applicable Management styles, assess their measurement and validation methods, and understand how evaluation results contribute to employee and business development.

For this pilot study, stringent selection criteria were employed to ensure the relevance and reliability of the data collected. Firstly, participating managers were required to possess a minimum of five years of managerial experience, providing a substantial foundation for insightful perspectives on management styles and their impact. Furthermore, managers were specifically chosen from large German companies with international teams, reflecting the study's focus on organizations with diverse structures and global operations. This deliberate selection aimed to capture nuanced insights into management practices within a context of both extensive experience and broad organizational scope.

The literature review synthesized diverse principles and hypotheses related to Management styles, categorizing them into five classifications. The subsequent research methodology employed a meticulous approach, including hypothesis analysis, questionnaire development, pilot interviews, and a detailed exploration of each hypothesis category. The exploratory research results provided insights into the application and effectiveness of Management styles in large German companies, specifically focusing on Agility, Time and Resource Management, Management Self-Reflection, Self-Actualization, Employee Motivation, and Development, and various Leadership Styles.

The findings revealed that agility plays a crucial role in navigating the dynamic business environment, with a shared emphasis on autonomy, creativity, and aligning employee decision-making with company goals. Time and resource Management were identified as critical components of team success, with a focus on flexibility, results-oriented approaches, and investment in employee tasks. Managers demonstrated a commitment to self-reflection, acknowledging the challenge of being sole judges of their performance and actively seeking feedback from employees.

Furthermore, the importance of employee development for satisfaction and company success was highlighted, emphasizing strategies such as tolerance for mistakes, recognition of good performance, and providing autonomy. The measurement of success in employee development initiatives varied slightly among Managers, reflecting the importance of metrics related to age, diversity, and a sense of belonging.

Lastly, the analysis of Management styles uncovered a unique approach in large German companies, where all three primary leadership styles (autocratic, democratic, and laissez-faire) are integrated for profitability and growth. Flexibility in applying leadership styles and recognizing the influence of individual Manager personalities emerged as common themes among the interviewed Managers.

## **Summary**

This study delves into the crucial relationship between different Management Styles and their impact on employee satisfaction within large German companies.



Recognizing the significance of employee satisfaction in shaping organizational performance and financial well-being, the research explores various methods for measuring and analysing employee satisfaction. The goal is to identify the most applicable Management Styles and their validation, shedding light on their role in supporting employee and business development.

The literature review categorizes diverse principles and hypotheses related to Management styles, providing a foundation for the subsequent research methodology. The study employs a meticulous approach, including hypothesis analysis, questionnaire development, pilot interviews, and an in-depth exploration of different Management style categories.

The exploratory research results uncover key insights into the application and effectiveness of Management styles in large German companies. Agility and Business Development are highlighted, emphasizing the importance of autonomy, creativity, and aligning employee decision-making with company goals. Time and Resource Management emerges as critical components for team success, with a focus on flexibility, results-oriented approaches, and investment in employee tasks.

The dimension of Management Self-Reflection is explored, revealing how Managers perceive and enhance their competencies. Employee Motivation and Development are addressed, emphasizing the need to invest time and resources in employee development to align with the concept of "self-actualization." The analysis of Leadership Styles in German companies reveals a unique approach, integrating autocratic, democratic, and laissez-faire styles for profitability and growth.

In conclusion, the study provides a comprehensive understanding of Management styles' implications on employee satisfaction, development, and overall business performance. The findings emphasize the importance of agility, effective time and resource Management, self-reflection among Managers, and strategic investment in employee development. German companies, with their strong focus on innovation and a motivated workforce, exemplify a commitment to employee-centered policies and practices. The study offers valuable insights for organizations aiming to enhance employee satisfaction, ultimately contributing to long-term success and profitability.

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# DOMĀŠANAS STILU APTAUJAS ADAPTĀCIJA UN STANDARTIZĀCIJA LATVIEŠU VALODĀ

## *Thinking Styles Inventory Adaptation and Standardization in Latvian*

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**Abstract.** *Thinking styles are defined as consistent individual differences in preferred ways of organizing and processing information and experience, thus bridging the gap between personality traits and cognitive processes, meaning, it is more important to understand what abilities people prefer to develop and use, rather than what abilities they have. Thinking styles remain an ongoing area of research in education and psychology, providing insights into students' experiences and informing educational practices. Latvia still faces a shortage of validated and standardized tests, thus to determine thinking styles, a questionnaire titled "Thinking Style Inventory – Revised II" was selected. This research is a part of a much wider study, which is based on the idea that nowadays the use of the internet and technology form and develop young people's habits of mind that have not yet been explored. Based on this idea, a research project was established whose overall goal is to discover the impact of young people's (age 16-25) internet use patterns on cognitive functioning (The impact of internet usage patterns on the development of youth's cognitive styles, No.: lzp-2021/1-0357). The goal of the specific stage of the study and thus this article is to adapt and standardize the Thinking Style Inventory–Revised II in Latvian. To reach the goal, the questionnaire underwent back and forth translation, then was piloted (n=30), checked for internal consistency, thus concluding the first stage of adaptation. For standardization (n=2169) factoranalysis, discrimination indexes and norms were determined. The results show an overall good internal consistency and the factoranalysis shows similar structure to the original questionnaire. The obtained results indicate that Thinking Style Inventory – Revised II Latvian version can be successfully used to determine thinking styles in Latvia.*

**Keywords:** *questionnaire adaptation; questionnaire standardization; stages of youth development, thinking styles*

## Ievads *Introduction*

Aizvien pieaugošais digitālo tehnoloģiju pielietojums un to nozīme it visās cilvēka dzīves jomās – mācībās, studijās, darbā, ikdienā (Hartnett, Brown & Anderson, 2014; Cascio & Montealegre, 2016; Tully, 2003; Røpke, 2001) – neapšaubāmi ietekmē un maina jauniešu paradumus mācībās, darbā, brīvā laika pavadīšanā un sadzīvē (Hendry & Kloep, 2015). Līdz ar tehnoloģiju attīstību jauniešiem mūsdienās paveras plašākas izvēles iespējas pašiem noteikt prioritātes izglītībā, karjerā, sociālās dzīves veidošanā, kur katrā no šīm sfērām paveras daudz mikroizvēļu. Šīs izvēles iezīmē dažādas attīstības trajektorijas jau no agrīna vecuma un formē veidu, kādā jaunieši izvēlas lietot savas spējas un talantus tādās dzīves jomās kā mācības, studijas un darbs (Arnett et al., 2010), un tas tiek apzīmēts ar terminu “domāšanas stili” (Sternberg, 1997). Pašreiz ir nepieciešams visaptverošāks ieskats veidā, kādā jauniešu tehnoloģiju un tīmekļa lietošanas paradumi ietekmē viņu domāšanas stilu. Aprakstītā problēma ir viens no galvenajiem mērķiem Rīgas Tehniskās universitātes un Latvijas Universitātes sadarbības projektā “Interneta lietošanas paternu ietekme uz jauniešu kognitīvo stilu attīstību” (Nr. lzp-2021/1-0357), kas ar Latvijas Zinātnes padomes finansiālo atbalstu tiek īstenots kopš 2022. gada. Šī pētījuma **mērķis** atbilst vienam no projekta uzdevumiem, t. i., adaptēt un standartizēt “Domāšanas stilu aptauju” latviešu valodā. Lai sasniegtu mērķi, tika izvirzīti četri pētījuma jautājumi: Kādi ir domāšanas stilu aptaujas skalu iekšējās saskaņotības rādītāji? Kādi ir domāšanas stilu aptaujas apgalvojumu diskriminācijas indeksi? Kāda ir domāšanas stilu aptaujas latviešu valodas versijas faktoru struktūra? Kādas ir domāšanas stilu aptaujas normas?

## Literatūras apskats *Literature review*

Domāšanas stili tiek definēti kā konsekventas individuālas atšķirības vēlamajos informācijas un pieredzes organizēšanas un apstrādes veidos, tādējādi mazinot plaisu starp personības iezīmēm un kognitīviem procesiem (Messick, 1984). Tas nozīmē, ka svarīgāk ir saprast, kādas savas individuālās spējas cilvēki labprātāk attīsta un lieto, nevis kādas spējas viņiem piemīt. Spējas attiecas uz to, cik labi cilvēks var kaut ko paveikt, taču stils ir veids, kādā cilvēkam patīk veikt darbības (Sternberg, 1997). Izpratne par individuālajām atšķirībām domāšanas stilos var izskaidrot, kādēļ cilvēki ar līdzīgām spējām izvēlas dažādas karjeras, profesijas, mācīšanās veidus (Berding et al., 2016). R. Šternbergs domāšanas stilus apraksta zem plašākas teorijas par mentālo pašpārvaldību (*theory of mental self-government*), kurā tiek aprakstīti 13 stili, kas sakārtoti 5 dimensijās.

1. tabula. **Domāšanas stilu raksturojums un piederība dimensijām** (Romera, 2018)  
 Table 1 **Description of thinking styles and their dimensions** (Romera, 2018)

Dimensija	Stils	Raksturojums
Funkcija	Likumdevējs	Rada, atklāj, veido, attīsta, inovē, ievieš savu metodi, mazāk strukturizēts.
	Izpildītājs	Seko instrukcijām, pilda prasīto, iekļaujas jau radītā struktūrā un rāmī.
	Tiesātājs	Izvērtē un kritizē jau paveikto, cilvēku rīcību.
Forma	Strukturētājs	Pārņemts ar vienu ideju (darbību), veltot tai visu savu laiku, resursus un degsmi, neskatoties uz to, ka veicami arī citi uzdevumi. Kad tas paveikts, uzsāk nākošo.
	Valdnieks	Sakārto veicamos darbus prioritārā secībā, izvērtējot pēc svarīguma kritērijiem, plāno, cik daudz laika un resursus katrs no uzdevumiem aizņems.
	Oligarhs	Visus darbus dara reizē, velta visiem darbiem vienādu daudzumu uzmanības neatkarīgi no to svarīguma pakāpes.
	Anarhists	Veido savu, reizēm citiem neizprotamu pieeju, nepatīk sistēmas, vadlīnijas un ierobežojumi.
Līmenis	Globālais	Redz kopskatu, darbojas ar to, domā vispārīgi.
	Lokālais	Orientēts uz detaļām, praktiskiem, specifiskiem rīkiem.
Sfēra	Internālais	Darbojas vienatnē, fokuss uz iekšējām norisēm un neatkarību.
	Eksternālais	Darbojas komandā, pārī, fokusējas uz ārējām norisēm, savstarpējību.
Orientācija	Konservatīvais	Izzina jaunus darbības veidus, neturas pie ierastā.
	Liberālais	Dara labi zināmā, ierastā manierē, ievēro tradīcijas.

Li-Fanga Žanga (*Li-Fang Zhang*), kura strādājusi ciešā sadarbībā ar R. Šternbergu, ir veikusi virkni pētījumu par kognitīvajiem stiliem (Zhang, 2002; Sternberg & Zhang, 2006; Sternberg & Zhang, 2009) un kopā ar R. Šternbergu ir izdalījusi domāšanas stilu tipus, kuri kombinējas no dažādām dimensijām. Lai gan sākotnēji ideja par 13 domāšanas stiliem sevī ietvēra faktu, ka šie stili eksistē paši par sevi, neatkarīgi un bez kāda vienojoša raksturojoša kopsaucēja, tomēr laika gaitā pierādījies, ka šis kopsaucējs tomēr ir atrodams starp dažādu stilu kombinācijām (Zhang, 2002). R. Šternbergs un L. F. Žanga ir klasificējuši esošos 13 domāšanas stilus trīs domāšanas stilu tipos, pamatojoties uz empīriskiem datiem un konceptuāliem argumentiem (Sternberg & Zhang, 2009; Zhang, 2002).

Pie pirmā domāšanas stilu tipa pieder Likumdevējs, Tiesātājs, Valdnieks, Globālais un Liberālais domāšanas stils. Visiem minētajiem stiliem raksturīga tendence būt radošākiem un inovatīvākiem, šiem indivīdiem patīk biežāk risināt uzdevumus, kuri prasa izziņā lietot kompleksus domāšanas procesus, patīk iedziļināties, iegrimt darbībā. Pie otrā domāšanas stilu tipa pieder Izpildītājs, Lokālais, Strukturētājs un Konservatīvais domāšanas stils. Šis tips dod priekšroku normām, regulām, noteikumiem, dod priekšroku vienkāršībai informācijas

apstrādē un pārlietu nenoslogot izziņas procesus kopumā (Zhang, 2002). Sākotnēji atlikušie domāšanas stili – Anarhists, Oligarhs, Internālais un Eksternālais – tika uzskatīti kā neitrāli un neatkarīgi, taču laika gaitā tika noskaidrots, ka tie veido trešo domāšanas stilu (Zhang, 2003). Šim stilam raksturīga atkarība no konkrētās darbības un spēja sevī inkorporēt stilus no pirmā un otrā tipa. Piemēram, neatkarīgi no tā, vai cilvēks labprātāk darbojas grupā (Eksternālais), vai vienatnē (Internālais), viņš savus uzdevumus var veikt hierarhiskā, prioritārā manierē (Strukturētājs) vai tikai koncentrējoties uz vienu uzdevumu un pāriet pie nākamā tikai pēc pirmā izpildes (Valdnieks) (Sternberg & Zhang, 2006).

## **Metodoloģija** *Methodology*

### **Instrumentārija raksturojums**

Datu ieguvei tika lietota Domāšanas stilu aptauja (Thinking Styles Inventory-Revised II), kura tika izstrādāta 2007. gadā (Sternberg, Wagner & Zhang, 2007). Aptauja sastāv no 65 apgalvojumiem, kuri sakārtoti 13 skalās; šīs skalas savukārt veido 5 lielas kognitīvo stilu dimensijas (faktoros). Katrā skalā ir 5 apgalvojumi, kas jānovērtē 7 punktu Likerta skalā, kur “1” apzīmē “apgalvojums neatspoguļo manu ierasto pieeju veicamajiem darbiem” un “7” apzīmē “apgalvojums pilnībā atspoguļo manu ierasto pieeju veicamajiem darbiem”. Aptauju var lietot gan pētniecībā, gan individuālajā psiholoģiskajā izpētē, lai noteiktu katra indivīda kognitīvos stilus, ko veido šo 13 stilu kombinācijas. Lai uzzinātu rezultātu individuālajā izpētē, katras skalas ietvaros tiek saskaitīti iegūtie punkti (skalā ir pieci apgalvojumi, tātad katrā skalā minimālais iegūstamo punktu skaits ir 5 un maksimālais – 35), pēc tam iegūtais punktu skaits jāizdala ar apgalvojumu skaitu, tādējādi iegūstot vidējo aritmētisko rādītāju. Šis rādītājs pēc tam tiek pielīdzināts vienam no sešiem līmeņiem katram stilam atsevišķi, variējot “ļoti zems”, “zems”, “vidēji zems”, “vidēji augsts”, “augsts”, “ļoti augsts”. Saņemot rezultātu “ļoti zems”, “zems” un “vidēji zems”, tiek noteikts, ka indivīdam nav raksturīgs konkrētais domāšanas stils; rezultāts “vidēji augsts” liecina, ka piemīt vismaz dažas konkrētā domāšanas stila pazīmes; rezultāts “augsts” liecina, ka piemīt vairākas konkrētā domāšanas stila pazīmes; un rezultāts “ļoti augsts” liecina, ka piemīt visas vai gandrīz visas konkrētā domāšanas stila pazīmes. Aptaujas skalu raksturojumi ir doti saskaņā ar literatūras analīzē raksturotajiem 13 domāšanas stiliem. Ņemot vērā, ka visi 13 stili sakārtojas piecās dimensijās (faktoros), tad var būt, ka viena faktora ietvaros indivīdam ir vairāki stili, kuri uzrāda paaugstinātus rādītājus.

Aptaujas adaptēšanai un standartizēšanai tika saņemta rakstiska atļauja no R. Šteinberga.

**Izlase**

Ņemot vērā kopējo pētījuma mērķi – iegūt informāciju par jauniešu interneta lietošanas un mācīšanās paradumu saistību ar domāšanas stiliem, kā arī Domāšanas stilu aptaujas adaptāciju un standartizāciju, aptaujai tika veidota reprezentatīva jauniešu izlase vecumā no 16 līdz 25 gadiem. Aptauja tika veikta Latvijas augstskolās (AII) visos studiju līmeņos un vispārējās vidējās izglītības iestādēs, kā arī vidējās profesionālās izglītības iestādēs. Realizētās izlases apjoms (pēc datu tīrīšanas) ietver 2912 respondentus, no kuriem 1886 ir studējošie un 1026 skolēni. Tā kā studējošo grupā daļa respondentu bija vecāki par 25 gadiem, tad tālākajos aprēķinos izmantoto gadījumu skaits  $n=2169$ . Vidējais respondentu vecums šajā izlasē 19,91 gads, no tiem 753 vīrieši, 1416 sievietes.

**Procedūra**

Sākotnēji aptaujas apgalvojumi tika iztulkoti no angļu uz latviešu valodu, ko veica trīs dažādi eksperti, kuriem bija piemērotas zināšanas angļu valodā un psiholoģijas terminoloģijā. Pēc tam tika organizēta kopēja sanāksme, kuras ietvaros eksperti vienojās par piemērotāko apgalvojumu tulkojuma versiju. Pēc tam katrs apgalvojums tika tulkots atpakaļ uz angļu valodu, lai varētu noteikt saderību, ko atkal izvērtēja projektā iesaistītie eksperti, un tika veiktas korekcijas apgalvojumu tulkojumam latviešu valodā. Pēc tam tika īstenots pilotaptaujas pirmais posms, kurā aptauja tika iedota aizpildei drukātā formātā 30 indivīdiem vecumā no 16 līdz 25 gadiem, kurā tika lūgts novērtēt apgalvojumus un izdarīt komentārus par apgalvojumu skaidrību. Pēc šīs procedūras aptaujas apgalvojumi izgāja fināla korekciju. Aptaujas tulkošanā un apgalvojumu interpretēšanā tika ievēroti vieglās valodas principi (Liepa & Polinska, 2022). Ņemot vērā, ka oriģinālaptaujas apgalvojumi ir britu angļu valodā, kurā novērojami daudzi frazeoloģismi, tad būtiskāk ir tos atveidot latviešu valodā, saglabājot pamatdomu, ne tik daudz turoties pie precīza tulkojuma. Pilotpētījuma otrajā posmā tika iegūti dati no sešām izglītības iestādēm, kuras deva informēto piekrišanu: četrām vispārizglītojošajām izglītības iestādēm, vienas vidējās profesionālās izglītības iestādes ( $n=85$ ) un vienas augstākās izglītības iestādes ( $n=50$ ). Respondenti aptauju aizpildīja piecās grupās (trīs skolēnu un divas studējošo grupas). Aptauja tika īstenota drukātā (papīra) formātā. Pēc aptaujas izpildes respondentiem tika lūgts sniegt komentārus par to. Pēc komentāru apspriešanas un nelielu korekciju veikšanas aptauja tika pārceļta tiešsaistes režīmā un izsūtīta respondentiem standartizācijai. Tika pārbaudīta iegūto rezultātu iekšējā saskaņotība, diskriminācijas indeksi, veikta faktoranalīze un aprēķinātas normas.

## Pētījuma rezultāti *Research Results*

Sākotnēji tika aprēķināta skalu iekšējā saskaņotība, izmantojot Kronbaha alfa koeficientu, aprēķinos saglabājot aptaujas oriģinālo skalu struktūru.

2. tabula. *Domāšanas stilu aptaujas ticamības rādītāji, izmantojot Kronbaha alfa koeficientu*

Table 2 *Internal consistency of thinking style inventory, Chronbach's alpha*

Skala	Apgalvojumu skaits	$\alpha$	Skala	Apgalvojumu skaits	A
Likumdevējs	5	.804	Globālais	5	.523
Izpildītājs	5	.751	Lokālais	5	.718
Tiesātājs	5	.742	Internālais	5	.758
Strukturētājs	5	.748	Eksternālais	5	.812
Valdnieks	5	.691	Konservatīvais	5	.776
Oligarhs	5	.715	Liberālais	5	.848
Anarhists	5	.654	Kopā	65	.727

Rezultāti norāda, ka kopējā alfa vērtība ir laba  $\alpha=0,727$ , kas tiek uzskatīts par pieņemamu, kā arī 12 skalu rādītāji variē no 0,654 līdz 0,848, kas liecina, ka šajās skalās alfa variē no pieņemamas līdz ļoti labai. Skala “Globālais stils” ir ar viszemāko rādītāju ( $\alpha=0,523$ ) zem 0,6, kas nozīmē, ka šo skalu būtu ieteicams pārskatīt, tādēļ tālāk tika aprēķināti skalu diskriminācijas indeksi, lai noteiktu problemātiskos apgalvojumus. Turpmāk tiks atspoguļoti būtiskākie diskriminācijas indeksi, t. i., skalai “Globālais” domāšanas stils.

3. tabula. *Domāšanas stilu aptaujas diskriminācijas indeksa rādītāji skalai “Globālais” domāšanas stils*

Table 3 *Thinking style inventory discrimination index for the scale “Global” thinking style*

Skala	Apgalvojums	DI
Globālais	Es mēdzu pievērst maz uzmanības detaļām	.110
	Mani vairāk interesē kopējais rezultāts, nevis izpildāmā uzdevuma detaļas	.368
	Es bieži uzsveru jautājuma galveno aspektu vai projekta kopējo ietekmi	.277
	Man patīk strādāt pie projektiem, kuros tiek risināti vispārīgi jautājumi, nevis sīkumi	.416
	Runājot vai pierakstot idejas, man patīk parādīt savu ideju apjomu un kontekstu, tas ir, kopainu	.304

Skalu diskriminācijas indeksiem jāiekļaujas robežās no 0,2 līdz 0,8, un pēc rezultātiem redzams, ka apgalvojums “Es mēdzu pievērst maz uzmanības



detaļām” nesasniedz indeksa zemo robežu, tādējādi apgalvojums pazemina kopējo skalas ticamību. Tas nozīmē, ka apgalvojums formulēts tā, ka respondentiem ir tendence tam nepiekrīst. Iespējams, tas rodas tādēļ, ka, lasot apgalvojumu, tiek palaists garām vārds “maz”. Ņemot vērā aptaujas specifisko uzbūvi, kas nosaka, ka katrā skalā būtu jābūt pieciem apgalvojumiem, šo apgalvojumu no tālākās apstrādes izslēgt nav iespējams, lai paaugstinātu skalas zinātnisko stiprumu. Tādēļ apgalvojums tika modificēts uz “Es nepievēršu lielu uzmanību detaļām”.

Ņemot vērā iepriekš minētos rezultātus, tika nolemts pieturēties pie oriģinālaptaujas apgalvojumu un skalu struktūras, kas tiks aplūkota tālāk.

4. tabula. *Domāšanas stilu aptaujas apgalvojumi domāšanas funkciju skalām*  
Table 4 *Thinking style inventory scale items for functions*

Skala	Apgalvojums
Likumdevējs	Man patīk problēmas, kuru atrisināšanai es varu izmēģināt savu pieeju.
	Saskaroties ar risināmu problēmu, es izmantoju savas idejas un stratēģijas, lai to atrisinātu.
	Man patīk eksperimentēt ar savām idejām un redzēt, līdz kam tās nonāk.
	Strādājot pie kāda uzdevuma, man patīk to uzsākt ar savām idejām.
	Man patīk situācijas, kurās es varu pielietot savas idejas un darbības veidus.
Izpildītājs	Risinot problēmu vai veicot kādu uzdevumu, man patīk ievērot konkrētus noteikumus vai norādījumus.
	Man patīk nodarboties ar uzdevumiem, kurus varu paveikt, sekojot norādījumiem.
	Man ir svarīgi, lai projektam ir skaidra struktūra, noteikts plāns un mērķis.
	Man patīk izdomāt problēmas risinājumu, ievērojot konkrētus noteikumus.
	Lai atrisinātu jebkuru problēmu, es rūpīgi piemeklēju pareizo metodi.
Tiesātājs	Man patīk projekti, kuros varu izpētīt un salīdzināt dažādus uzskatus vai idejas.
	Man patīk veikt darbu, kas ietver analīzi, vērtēšanu vai salīdzināšanu.
	Man patīk pārbaudīt un izvērtēt pretējus uzskatus vai pretrunīgas idejas.
	Man patīk situācijas, kurās es varu salīdzināt un izvērtēt dažādus darbības veidus.
	Es došu priekšroku uzdevumiem vai problēmām, kurās varu novērtēt citu izstrādātos projektus vai risinājumus.

Domāšanas stilu faktorā “funkcijas” ietilpst 3 skalas: “Likumdevējs”, “Izpildītājs” un “Tiesātājs”, katrā skalā ietilpst 5 apgalvojumi. “Likumdevējs” gūst gandarījumu no uzdevumiem, kas prasa radošu pieeju, ļaujot iztēloties un īstenot jaunas perspektīvas. “Izpildītājs” galvenokārt koncentrējas uz uzdevumu izpildi, stingri ievērojot noteiktās vadlīnijas. Visbeidzot, “Tiesātājs” pievērš uzmanību citu cilvēku un viņu rezultātu novērtējumam.

5. tabula. **Domāšanas stilu aptaujas apgalvojumi domāšanas formu skalām**  
**Table 5 Thinking style inventory scale items for forms**

Skala	Apgalvojums
Strukturētājs	Ja ir daudz darāmā, man ir skaidrs, kādā secībā veikt uzdevumus.
	Man patīk noteikt prioritātes darāmajiem darbiem, pirms es sāku tos veikt.
	Risinot sarežģījumus, man ir laba izpratne par to, cik svarīgs ir katrs no tiem un kādā secībā tos risināt.
	Uzsākot kaut ko darīt, man patīk sastādīt veicamo darbu sarakstu un sakārtot tos pēc svarīguma.
	Strādājot pie uzdevuma, es izprotu, kā tā daļa ir saistīta ar uzdevuma vispārējo mērķi.
Valdnieks	Man patīk koncentrēties uz vienu uzdevumu vienlaikus.
	Man ir raksturīgi pievērst visu uzmanību tikai kaut kam vienam.
	Man ir jāpabeidz viens projekts, pirms uzsākt citu.
	Ja ir jādara vairāki svarīgi darbi, es koncentrējos uz vienu, kas man ir vissvarīgākais, un pārējos atstāju novārtā.
	Izsakot idejas, es labprātāk koncentrējos uz vienu ideju, nevis vairākām vienlaikus.
Oligarhs	Ja jādara vairāki svarīgi darbi, es izvēlos tos, kuri ir vissvarīgākie maniem draugiem un kolēģiem.
	Uzsākot darba vai projekta īstenošanu, es koncentrējos uz tām daļām, kas visvairāk attiecas uz manu vienaudžu grupu.
	Diskutējot vai aprakstot kādu tēmu, es pieturos pie vienaudžu vai kolēģu atzītiem uzskatiem.
	Es dodu priekšroku darbam pie projekta vai uzdevuma, kas ir atzinīgi novērtēts un pieņemams maniem vienaudžiem.
	Ja ir veicami vairāki svarīgi darbi, es izdaru tos, kuri ir vissvarīgākie man un maniem kolēģiem.
Anarhists	Es pievērsu vienlīdz daudz uzmanības visiem uzdevumiem, kuros esmu iesaistīts.
	Strādājot pie projekta, es parasti veicu visdažādākos uzdevumus neatkarīgi no to svarīguma pakāpes projektam.
	Es viegli pārslēdzos no viena uzdevuma pie cita, jo visi uzdevumi man šķiet vienlīdz svarīgi.
	Es mēdzu risināt vairākas problēmas vienlaikus, jo bieži vien tās ir vienlīdz steidzamas.
	Es bieži pamanu, ka tad, kad nodarbojos ar vienas problēmas risināšanu, parādās cita, kas ir tikpat svarīga.

Domāšanas stilu faktorā “formas” ietilpst 4 skalas: “Strukturētājs”, “Valdnieks”, “Oligarhs” un “Anarhists”, katrā skalā ietilpst 5 apgalvojumi. “Strukturētājs” dod priekšroku fokusam uz vienu uzdevumu, veltot tam visu savu laiku un resursus, “Valdnieks” sadala uzdevumus un savu uzmanību tiem prioritārā secībā, “Oligarhs” strādā pie vairākiem mērķiem un uzdevumiem, cenšoties katram veltīt vienādu uzmanības apjomu, bez skaidrām prioritātēm, un “Anarhists” izbauda nestrukturētus uzdevumus.

**6. tabula. Domāšanas stilu aptaujas apgalvojumi domāšanas līmeņu skalām**  
**Table 6 Thinking style inventory scale items for levels**

Skala	Apgalvojums
Globālais	Pārrunājot vai pierakstot idejas, man patīk atspoguļot savu domu vērienu, būtību un kopskatu.
	Man ir tendence uzsvērt problēmas vai uzdevuma galvenos aspektus un koncentrēties uz iznākumu.
	Es nepievēršu lielu uzmanību detaļām.
	Mani vairāk interesē kopējais rezultāts, nevis izpildāmā uzdevuma detaļas.
	Man patīk strādāt pie projektiem, kuros tiek risināti vispārīgi jautājumi, nevis sīkumi.
Lokālais	Man patīk risināt problēmas, kurās jāpievērš uzmanība detaļām.
	Es labprātāk strādāju pie uzdevumiem, kuri man ļauj iedziļināties detaļās.
	Apspriežot vai aprakstot kādu tēmu, domāju, ka detaļas un fakti ir svarīgāki par kopējo ainu.
	Es vairāk uzmanības pievēršu uzdevuma atsevišķām daļām, nevis tā galarezultātam vai nozīmīgumam.
	Es labprātāk risinu problēmas, kas prasa pievērst uzmanību daudzām detaļām.

Domāšanas stilu faktorā “līmenis” ietilpst 2 skalas: “Globālais” un “Lokālais”, katrā skalā ietilpst 5 apgalvojumi. “Lokālais” dod priekšroku uz detaļām orientētiem uzdevumiem, savukārt “Globālais” stils labprātāk cenšas saskatīt kopsakarības un konkrētā uzdevuma vispārējo perspektīvu.

**7. tabula. Domāšanas stilu aptaujas apgalvojumi domāšanas sfēru skalām**  
**Table 7 Thinking style inventory scale items for scopes**

Skala	Apgalvojums
Internālais	Pie uzdevuma vai problēmas risināšanas man patīk strādāt vienatnē.
	Man patīk projekti, kurus es varu paveikt patstāvīgi.
	Man patīk kontrolēt visus projekta posmus, neprasot padomu citiem.
	Es dodu priekšroku situācijām, kurās varu īstenot savas idejas, nepaļaujoties uz citiem.
	Mēģinot pieņemt lēmumu, es paļaujos uz savu spriedumu par situāciju.
Eksternālais	Man patīk situācijas, kurās es sadarbojos ar citiem un visi strādā kopā.
	Man patīk iesaistīties aktivitātēs, kurās varu sadarboties ar citiem kā daļa no komandas.
	Uzsākot kādu uzdevumu, man patīk apspriest idejas ar draugiem vai vienaudžiem.
	Strādājot pie kāda projekta, man patīk apmainīties ar idejām un saņemt citu cilvēku ieteikumus.
	Diskusijās vai rakstu darbos man patīk apvienot savas idejas ar citu idejām.

Domāšanas stilu faktorā “sfēra” ietilpst 2 skalas: “Internālais” un “Eksternālais”, katrā skalā ietilpst 5 apgalvojumi. “Internālais” dod priekšroku

darboties vienatnē, neatkarīgi no citiem, savukārt “Eksternālais” stils labprātāk darbojas komandā.

8. tabula. *Domāšanas stilu aptaujas apgalvojumi domāšanas orientāciju skalām*  
 Table 8 *Thinking style inventory scale items for leanings*

Skala	Apgalvojums
Konservatīvais	Es ievēroju vispārpieņemtus noteikumus vai rīcības veidus, kad veicu kādas darbības.
	Man patīk problēmas un uzdevumi, kuru risināšanā ir jāievēro stingri noteikumi.
	Man patīk situācijas, kurās varu ievērot noteiktu kārtību.
	Saskaroties ar problēmu, man patīk to risināt ierastā veidā.
	Kad esmu par kaut ko atbildīgs, man patīk pielietot jau agrāk izmantotās metodes un idejas.
Liberālais	Man patīk rīkoties jaunā veidā, ko citi iepriekš nav pielietojuši.
	Man patīk risināt senas, neatrisinātas problēmas un atrast jaunus veidus, kā tās atrisināt.
	Man patīk mainīt ierasto kārtību, lai uzlabotu uzdevumu izpildes gaitu.
	Saskaroties ar problēmu, es izvēlos izmēģināt jaunas stratēģijas vai metodes, lai to atrisinātu.
	Man patīk apstrīdēt novecojušas idejas vai darbības veidus un meklēt labākus.

9. tabula. *Domāšanas stilu aptaujas latviešu valodas versijas faktoru struktūra un tās saderība ar oriģinālaptaujas faktoru struktūru*  
 Table 9 *Thinking style inventory latvian version's factor structure and it's compatibility with the original factor structure*

Oriģinālās aptaujas dimensija	Skala	Faktors		
		1	2	3
Orientācija	Liberālais	.868		
Funkcija	Likumdevējs	.842		
Funkcija	Tiesātājs	.779		
Forma	Anarhists	.632		
Līmenis	Globālais	.574		
Orientācija	Konservatīvais		.891	
Funkcija	Izpildītājs		.842	
Forma	Vadnieks		.595	
Forma	Strukturētājs		.450	
Līmenis	Lokālais		.369	
Forma	Oligarhs			.492
Sfēra	Eksternālais			.763
Sfēra	Internālais			-.707

Domāšanas stilu faktorā “orientācija” ietilpst 2 skalas: “Konservatīvais” un “Liberālais”, katrā skalā ietilpst 5 apgalvojumi. “Konservatīvais” dod priekšroku pieturēties pie labi zināmā, ierastā, savukārt “Liberālais” stils labprātāk izzina jaunus, nebijušus darbības veidus.

Tālāk tika pārbaudīta Domāšanas stilu aptaujas latviešu valodas versijas faktoru struktūra un tās atbilstība oriģinālaptaujas faktoru struktūrai. Ņemot vērā, ka oriģinālās aptaujas apgalvojumu iekšējā saskaņotība skalu līmenī uzrādīja labus rādītājus, tiek paturēta oriģinālā skalu struktūra un faktoranalīze tiek veikta, lai noteiktu skalu piederību domāšanas stilu dimensijām.

Kopumā oriģinālajā aptaujā ir piecas dimensijas, taču, veicot faktoru rotāciju aptaujas latviešu valodas versijai, izveidojās trīs faktori. Šos rezultātus labāk spēj izskaidrot izdalītie trīs domāšanas stilu tipi (Zhang, 2002; Zhang, 2003; Sternberg & Zhang, 2006), tādēļ turpmāk rezultāti tiks analizēti no šo trīs domāšanas tipu perspektīvas un to raksturojumiem.

Pirmajā faktorā ietilpst piecas skalas: viena skala no oriģinālfaktora “Līmenis” (Globālais), viena skala no faktora “Forma” (Anarhists), viena skala no faktora “Orientācija” (Liberālais), divas skalas no faktora “Funkcija” (Likumdevējs, Tiesātājs), nosakot to, ka šīs skalas veido vienu lielu dimensiju. Šie rezultāti gandrīz sakrīt ar pirmā domāšanas stila tipu, kurā arī ir piecas skalas, taču “Anarhista” vietā ir “Valdnieks”. Abas šīs skalas pieder faktoram “Forma”. Saskaņā ar L.-F. Žangas (2006) raksturojumu “Anarhists” pieder trešajam domāšanas tipam, kas vairāk vadās pēc dotā uzdevuma, un Anarhists sevī inkorporē daudzas un dažādas pieejas uzdevumiem, taču, aplūkojot Anarhista raksturojumu, šim stilam raksturīgs haotiskums un neordināra pieeja problēmām, uzdevumiem, kas ir neatņemama radoša procesa sastāvdaļa.

Otrajā faktorā ietilpst piecas skalas: viena skala no oriģinālfaktora “Orientācija” (Konservatīvais), viena skala no oriģinālfaktora “Funkcija” (Izpildītājs), divas skalas no oriģinālfaktora “Forma” (Valdnieks, Strukturētājs) un viena skala no oriģinālfaktora “Līmenis” (Lokālais). Šie rezultāti gandrīz sakrīt ar otrā domāšanas stila tipu, kurā ietilpst četras skalas, taču latviešu valodas versijai nāk klāt vēl piektā skala “Valdnieks”. Šo domāšanas stila tipu raksturo patika un priekšroka iekļauties noteikumos, kā arī tendence uz vienkāršību informācijas apstrādē. Iespējams, tādēļ šajā tipā iekļaujas arī “Valdnieks”, jo šim stilam raksturīga vēlme vispirms sakārtot veicamos darbus prioritārā secībā, izvērtējot pēc svarīguma kritērijiem, un plānot, cik daudz laika un resursus katrs no uzdevumiem aizņems (Romera, 2018).

Visbeidzot, trešajā faktorā ietilpst trīs skalas: viena skala no oriģinālfaktora “Forma” (Oligarhs) un divas skalas no faktora “Sfēra” (Eksternālais, Internālais). Arī šie rezultāti gandrīz sakrīt ar trešā domāšanas stila tipu, kurā ietilpst četras skalas: jau minētais trešais stils un “Anarhists”, kurš šajā pētījumā vairāk iederas pie pirmā domāšanas stila tipa. Kopumā trešo domāšanas stila tipu raksturo tas, ka atkarībā no darāmā šis tips sevī ietvert pazīmes no iepriekšējiem diviem

domāšanas stilu tipiem, piemēram, neatkarīgi no tā, vai cilvēks labprātāk darbojas grupā (Eksternālais) vai vienatnē (Internālais), viņš savus uzdevumus var veikt hierarhiskā, prioritārā manierē (Strukturētājs) vai, tikai koncentrējoties uz vienu uzdevumu, pāriet pie nākošā pēc pirmā uzdevuma izpildes (Valdnieks).

Visbeidzot tika noteiktas normas 13 domāšanas stilu skalām. Normas tika noteiktas, aprēķinot procentiles, un tika izdalītas 6 līmeņu kategorijas atbilstoši oriģinālaptaujas rezultātu interpretācijai. Normas tiek noteiktas visai izlasei kopumā, tātad 16–25 gadus veciem jauniešiem, kuri pašreiz aktīvi mācās un studē.

10. tabula. *Domāšanas stilu aptaujas latviešu valodas versijas normas*  
Table 10 *Thinking style inventory latvian version's norms*

Līmenis (atbilstības kategorija)	Ļoti augsta	Augsta	Vidēji augsta	Vidēji zema	Zema	Ļoti zema	
Skala	Likumdevējs	6-7	5,2-5,9	4,4-5,1	3,6-4,3	3,-3,5	1-2,9
	Izpildītājs	6-7	5,4-5,9	4,6-5,3	3,8-4,5	3,2-3,7	1-3,1
	Tiesātājs	5,4-7	4,8-5,3	4-4,7	3,4-3,9	2,6-3,3	1-2,5
	Strukturētājs	6-7	5,2-5,9	4,4-5,1	3,6-4,3	3-3,5	1-2,9
	Valdnieks	5,4-7	4,6-5,3	3,8-4,5	3-3,7	2,6-2,9	1-2,5
	Oligarhs	5,2-7	4,4-5,1	3,8-4,3	3,2-3,7	2,7-3,1	1-2,6
	Anarhists	5,4-7	4,6-5,3	4,-4,5	3,2-3,9	2,8-3,1	1,-2,7
	Globālais	5-7	4,4-4,9	3,8-4,3	3,2-3,7	2,8-3,1	1-2,7
	Lokālais	5,2-7	4,4-5,1	3,8-4,3	3,2-3,7	2,6-3,1	1-2,5
	Internālais	5,8-7	5-5,7	4,2-4,9	3,4-4,1	2,8-3,3	1-2,7
	Eksternālais	5,8-7	5-5,7	4-4,9	3,2-3,9	2,6-3,1	1-2,5
	Konservatīvais	5,8-7	5-5,7	4-4,9	3,4-3,9	3-3,3	1-2,9
	Liberālais	5,6-7	4,6-5,5	3,8-4,5	3-3,7	2,4-2,9	1-2,3

Katrā skalā ir pieci apgalvojumi, kas jānovērtē 7 punktu Likerta tipa skalā. Individuālajā izpētē rezultāts tiek rēķināts, saskaitot iegūtos punktus par katru apgalvojumu un izdalot ar apgalvojumu skaitu, rezultātā iegūstot vidējo aritmētisko rādītāju. Pēc tam šis vidējais aritmētiskais rādītājs tiek interpretēts atbilstoši iegūtajām normām kā ļoti augsts, augsts, vidēji augsts, vidēji zems, zems vai ļoti zems rezultāts. No iegūtajiem rezultātiem redzams, ka ļoti augsti rādītāji variē no 5,2 līdz 7 punktiem, augsti rādītāji variē no 4,4 līdz 5,9 punktiem un vidēji augsti rādītāji variē no 3,8 līdz 5,3 punktiem. Trīs zemākie rādītāji variē no 4,5 punktiem līdz 1 punktam, kas nozīmē to, ka indivīds nedod priekšroku šim stilam.

## Secinājumi Conclusions

Domāšanas stilu aptauju (*Thinking Styles Inventory-Revised II*) var sekmīgi izmantot psiholoģiskajos pētījumos latviešu valodā un jauniešu izpētē Latvijā.

Sākotnēji tika pārbaudīti domāšanas stilu aptaujas skalu iekšējās saskaņotības rādītāji (Kronbaha alfa koeficients). Rezultātā kopējā alfa vērtība ir laba  $\alpha=0,727$ , 12 skalu rādītāji variē no 0,654 līdz 0,848. Skala “Globālais” stils ir ar viszemāko rādītāju  $\alpha=0,523$ , tāpēc šī skala tika pārskatīta un tika aprēķināti skalu diskriminācijas indeksi, lai noteiktu problemātiskos apgalvojumus.

Skalu diskriminācijas indeksiem jāiekļaujas robežās no 0,2 līdz 0,8, un pēc pētījuma rezultātiem tika konstatēts, ka apgalvojums “Es mēdzu pievērst maz uzmanības detaļām” nesasniedz indeksa zemāko robežu, tādējādi apgalvojums pazemina kopējo skalas ticamību. Ņemot vērā aptaujas specifisko uzbūvi, ka katrā skalā būtu jābūt pieciem apgalvojumiem, šo apgalvojumu nevar izslēgt no tālākās apstrādes. Lai paaugstinātu skalas zinātnisko stiprumu, apgalvojums tika pārformulēts uz “Es nepievēršu lielu uzmanību detaļām”.

Tā kā oriģinālās aptaujas apgalvojumu iekšējā saskaņotība skalu līmenī uzrādīja labus rādītājus, tika paturēta oriģinālā skalu struktūra. Atbildot uz 3. pētījuma jautājumu, tika veikta *varimax* faktoranalīze, lai noteiktu skalu piederību domāšanas stilu dimensijām. Oriģinālajā aptaujā ir piecas dimensijas, taču, veicot faktoru rotāciju aptaujas latviešu valodas versijai, izveidojās trīs faktori, kas sakrīt ar domāšanas stilu tipiem.

Tika aprēķinātas procentiles, nosakot rezultātus – ļoti augsts, augsts, vidēji augsts, vidēji zems, zems vai ļoti zems rezultāts. Iegūtie rezultāti rāda, ka ļoti augsti rādītāji variē no 5,2 līdz 7 punktiem, augsti rādītāji variē no 4,4 līdz 5,9 punktiem un vidēji augsti rādītāji variē no 3,8 līdz 5,3 punktiem. Trīs zemākie rādītāji variē no 4,5 punktiem līdz 1 punktam, kas nozīmē, ka respondentam nepiemīt konkrētā stila raksturojums.

Aptauja ir lietojama gan individuālajā izpētē, gan pētniecībā, aptauju var lietot, atbilstoši atsaucoties uz šo publikāciju.

### *Summary*

The goal of this article is to adapt and standardize the Thinking Style Inventory – Revised II in Latvian. The questionnaire consists of 65 statements, which make up 13 scales (styles) that fall into 5 factors. The points are scored from 1–7 and can be used in research and in individual assessment. To reach the goal, the questionnaire underwent back and forth translation, then was piloted ( $n=30$ ), checked for internal consistency, thus concluding the first stage of adaptation. For standardization ( $n=2169$ , age 16–25) factoranalysis, discrimination indexes, and norms were determined. The results show an overall good internal consistency the overall Chronbach’s alpha value is good  $\alpha=0.727$ , the scores of 12 scales range 0.654 – 0.848. The scale “Global” style has the lowest score  $\alpha=0.523$ , so this scale was revised and discriminatory index showed one problematic statement, which was revisited. As the internal consistency of the statements of the original survey at the scale level showed good indicators, the

original structure of the scales was kept. Then factoranalysis was conducted to determine the 13 scale's belonging to the 5 dimensions of thinking styles. The original survey has five dimensions, but by rotating the factors for the Latvian version of the survey, three factors were created that correspond to the thinking style types. Finally percentiles were calculated, determining the results – very high, high, medium high, medium low, low, or very low result. The obtained results show that very high indicators vary from 5.2 – 7 points, high indicators vary from 4.4 – 5.9 points and moderately high indicators vary from 3.8-5.3 points. The three lowest indicators vary from 4.5 points to 1 point, which means that the respondent does not have the characteristics of the specific style. The obtained results indicate that Thinking Style Inventory – Revised II Latvian version can be successfully used to determine thinking styles in Latvia, it can be used in individual assessment and research by providing proper reference to this research article.

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# CORRELATION BETWEEN PERSONNEL' AUTHENTICITY IN THE WORKPLACE, BURNOUT AND WELL-BEING

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**Abstract.** *To be authentic is to be oneself, needs, true and original, to be aware of one's identity, to act in accordance with values, needs and desires, which naturally contributes to quality of life. Well-being is a universal life goal and one of the most important strategic priorities and human resource trends in organizations today. A large part of people's lives is spent at work, which today is characterized by uncertainty, competitiveness, and stress, so it is in the interest of organizations to contribute authentic expressions in their employees, making them feel better and thus more productive, while attracting new talents who value authenticity at work as a psychological benefit. The aim of the research is to explore personnel' authenticity in the workplace in relation to burnout and well-being and to develop proposals to human resource managers and managers for enhancing personnel' authenticity and well-being and reducing burnout. Three research questions: Are there correlations between personnel' authenticity in the workplace, burnout, and well-being; Are there differences in variables between age groups, by organization size, between seniority groups and different types of work models; Does authenticity in the workplace affect burnout and well-being. The following methods were used: Relational Authenticity Questionnaire; Maslach Burnout Inventory – General Survey; Index of Psychological Well-Being at Work; two open questions created by the authors of the study and socio-demographic survey. Based on the results, it was found that there are correlations between variables, namely, a positive relationship between relational authenticity and well-being and a negative – between both exhaustion and cynicism burnout subscales. There are differences in variables between age groups, seniority groups and different types of work models, and the impact of authenticity on both burnout and well-being was found. Results help to draw the attention of employers to promotion of authenticity as a tool for enhancing well-being and preventing burnout, proposals can be used for aforementioned purposes in organizations.*

**Keywords:** *authenticity in the workplace, burnout, personnel, well-being at work.*

## Introduction

According to one of the world's leading publications of business and economic sector “Forbes”, the prevailing trends in human resources management for the year 2023 underscore the imperative and significance of enhancing employee well-being. Escalating workplace tensions highlights the importance

for businesses to establish roles that serve as catalysts for employee well-being (Forbes, 2023). Over the past decade, it has transitioned from a benevolence-focused program to a strategic initiative for organizational success (Mehta, 2021).

The COVID-19 pandemic has also highlighted the problem of employee burnout (Moss, 2021), accelerating the high burnout levels that were reported previously. These developments have underscored the significance of authentic leadership in fostering a psychologically safe working environment (Yan-qiao & Xiong-ying, 2020). The competitiveness of the workplace can now be determined by the degree to which the working environment ensures the authenticity and well-being of its staff (Reis, Braga, & Trullen, 2017). Organizations are literally fighting for talents (Bérubé, Maor, Mugayar-Baldocchi, & Reich, 2022), who have become far more demanding (Finizio, 2023). The current evolution of employees shows that it is essential to aspire to authenticity at work as an important factor in attracting and sustaining employees.

The aim of the research is to explore personnel' authenticity in the workplace in relation to burnout and well-being and to develop proposals to human resource managers and managers for enhancing personnel' authenticity and well-being and reducing burnout. The authors formulated three research questions: (RQ1) Are there correlations between personnel' authenticity in the workplace, burnout, and well-being; (RQ2) Are there differences in variables between age groups, by organization size, between seniority groups and different types of work models; (RQ3) Does authenticity in the workplace affect burnout and well-being? The online questionnaire method on Webropol Surveys was used. The survey included three original measuring instruments.

## **Literature Review**

Authenticity describes the awareness of one's true self and the ability to act in accordance with it (Knoll, Meyer, Kroemer, & Schröder-Abé, 2015; Metin, Taris, Peeters, van Beek, & Van den Bosch, 2016). Authenticity has gained heightened recognition in the working environment given its positive impact on well-being (Kuntz & Abbott, 2017). Empirical research suggests that experience of authenticity at work improves the use of cognitive, emotional, and physical abilities, which in turn affects engagement, creativity and innovation, job performance, retention at work and overall well-being (Kuntz & Abbott, 2017; Metin et al., 2016; Menard & Brunet, 2011). Organizations that support self-awareness and empower the self-expression of values, beliefs and interests promote authenticity (Gagne & Deci, 2005). The resulting inauthenticity of the employee is due to burnout and alienation from itself, contributing to customers distrust towards both the workers and organization (Yagil & Medler-Liraz, 2014; Kim, David, Chen, & Liang, 2023). An important aspect of authenticity at work involves relations with others (Kernis & Goldman, 2006). The authenticity of

relationships is defined as how true (real) an individual is in their relationship with colleagues and managers. The conceptualization of relational authenticity is more akin to an individual's characterization within a specific organizational context rather than being a rigid, consistently resilient personality trait (Ostermeier, Medina-Craven, Camp, & Davis, 2022). Age is an important factor to consider when examining whether authenticity will affect an organization's results (Ostermeier, Medina-Craven, Camp, & Davis, 2022).

Burnout is a psychological syndrome that occurs as a long-term response to chronic interpersonal stressors at work (Maslach, Schaufeli, & Leiter, 2001). The basic dimensions: feelings of exhaustion and fatigue, feelings of cynicism and alienation from work. This model includes an experience of individual stress in a social context and an individual's perception of themselves or others (Maslach & Leiter, 2016). The volatile context forces organizations to look for new ways to boost profits and productivity, thus creating additional work stress and overload, leading to widespread employee burnout (Fastje, Mesmer-Magnus, Guidice, & Andrews, 2023). It is assumed that the initial development of exhaustion arises in response to elevated demands and excessive workload. Subsequently, this can lead to alienation and negative reactions towards both individuals and work, manifesting as depersonalization or cynicism (Maslach & Leiter, 2016). High levels in any of these three dimensions suggest burnout (Pemberton & Kisamore, 2023).

In literature, psychological well-being and psychological tension are key references to psychological health indicators (Nelson et al., 2014). Psychological well-being at work is associated to internal states of happiness contributing to satisfaction with life, conviction, and a sense of joy (Nelson et al., 2014; Li & Lin, 2021). It describes an individual's subjective positive experience at work (Morin et al., 2017; Gilbert, Dagenais-Desmarais, & Savoie, 2011). The psychological well-being of employees can serve as the foundation for fostering innovation, the highest outcomes and unlocking the full realization of human potential (Hannah, Perez, Lester, & Quick, 2020). The framework includes five dimensions: 1) interpersonal fit at work 2) thriving at work 3) feeling of competency at work 4) perceived recognition at work 5) desire for involvement at work (Dagenais-Desmarais & Savoie, 2012). Well-being can create courage to be authentic (Wood, Linley, Maltby, Baliouis, & Joseph, 2008), or it can be a two-way interaction (Knoll et al., 2015) wherein well-being facilitates self-expression, and the resulting knowledge contributes to higher self-awareness.

Numerous studies associate the personnel' authenticity in the workplace with burnout as an integral facet of employee well-being, with low levels of authenticity linked to higher burnout rates (van den Bosch & Taris, 2014; van den Bosch & Taris, 2018). By promoting psychological well-being, organizations can optimize the utilization of human resources, mitigate the risk of burnout, and enhance the authenticity of staff at work, creating a mutual relationship.

## Methodology

*Sample:* The sample of the study consists of 259 Latvian employees (88% of women, 12% of men), the most respondents are in the group 26-35 years (30.1%), the type of work performed: in-office (48.3%), hybrid (42.8%), remote (8.9%).

*Measure:* The following were used for data extraction: a survey of psychological well-being at work (Index of Psychological Well-Being at Work; IPWBW, Dagenais-Desmarais & Savoie, 2012) is a self-assessment survey for evaluating psychological well-being at work, consisting of 25 allegations. The allegations contain five factors: (1) interpersonal fit at work, (2) thriving at work, (3) feeling of competency at work, (4) perceived recognition at work, (5) desire for involvement at work. The allegations are assessed with a 5-point Likert scale. In addition, paper includes relational authenticity survey and Maslach burnout poll. Relational Authenticity survey is adapted by K. Ostermeier with colleagues (Lopez & Rice, 2006, cited by Ostermeier, Medina-Craven, Camp, & Davis, 2022). The self-assessment survey consists of 7 verses of the same scale. Maslach burnout poll contains 16 allegations (Maslach Burnout Inventory – General Survey; MBI – GS, Maslach, Jackson, & Leiter, 1996). Statements should be evaluated with the original 7-point Likert scale. The allegations form three subscales: emotional exhaustion, cynicism, or depersonalization, and professional efficiency, or personal achievement.

*Procedure and analysis methods:* The survey was conducted anonymously using the online questionnaire method on the Webropol Surveys platform. The survey took an average of 15 minutes to complete. The data processing programme “JAMOVI 2.2.5” was used. Methods used for data analysis include Spearman’s rank correlation, Kruskal–Wallis H test, Linear multi-factor regression model and coding.

## Results

A Spearman’s rank correlation analysis (Table 1) was conducted to investigate the relationship between authenticity at work, burnout and well-being (RQ1). The coefficients show a statistically significant positive, very weak relationship between relational authenticity and well-being subscales ( $r_s=0.15^*-0.30^{***}$ ), which means that the well-being may slightly improve as the relational authenticity increases, and vice versa. Negative, moderate correlation of well-being with burnout exhaustion subscale ( $r_s=-0.38^{***}-0.50^{***}$ ) has been observed, and exhaustion is most likely to decrease as well-being improves. Perceived recognition at work is most closely linked to exhaustion ( $r_s = -0.50^{***}$ ), i.e., it is the feelings of evaluation and recognition of investment that can help to prevent burnout risk. A statistically significant negative, very weak correlation has been observed between relational authenticity and exhaustion ( $r_s = -0.29$ ),

indicating that exhaustion may decrease or be less pronounced as the employment relationship becomes more authentic.

Positive, very weak to moderately close ( $r_s = 0.40^{***} - 0.62^{***}$ ) associations of professional efficiency with well-being were also revealed, as well as positive, very weak associations of professional efficiency with relational authenticity ( $r_s = 0.27^{***}$ ), suggesting that an increase in relational authenticity may contribute to the feelings of professional efficiency.

Table 1 Spearman's rank correlation coefficients

Variable subscale	M	SD	Spearman's rank correlation									
			IFW	TW	FCW	PRW	DIW	RA	E	C	PE	
interpersonal fit at work (IFW)	4.09	0.68	1									
thriving at work (TW)	3.87	0.88	0.68***	1								
feeling of competency at work (FCW)	4.13	0.73	0.65***	0.70***	1							
perceived recognition at work (PRW)	3.86	0.82	0.72***	0.76***	0.70***	1						
desire for involvement at work (DIW)	3.88	0.79	0.62***	0.68***	0.56***	0.60***	1					
relational authenticity (RA)	2.35	0.86	0.26***	0.25***	0.29***	0.30***	0.15***	1				
exhaustion (E)	3.92	1.57	-0.43***	-0.49***	-0.40***	-0.50***	-0.38***	-0.29***	1			
cynicism (C)	3.43	1.48	-0.47***	-0.62***	-0.39***	-0.52***	-0.42***	-0.38***	0.69***	1		
professional efficiency (PE)	5.72	0.99	0.45***	0.57***	0.62***	0.48***	0.40***	0.27***	-0.32***	-0.44***	1	

Note:  $N=259$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

Kruskal–Wallis H test was conducted to investigate differences between age groups, by organization size, between seniority groups and type-of-work groups (RQ2). The results show statistically significant differences in thriving at work, perceived recognition, and all burnout subscales across age groups ( $p \leq 0.05$ ) (Table 2). This suggests that age is an essential aspect of these investigational variables.

Table 2 Differences in variables between seniority groups ( $N = 259$ )

Variable subscale	Kruskal–Wallis H criterion	p
Thriving at work	15.58	<b>0.008</b>
Perceived recognition at work	18.57	<b>0.002</b>
Exhaustion	12.54	<b>0.028</b>
Cynicism	12.66	<b>0.027</b>
Professional efficiency	20.31	<b>0.001</b>

In the context of thriving at work, the average scores across six age groups reveal that older respondents, specifically those in the 56–65-year group, report the highest opportunities to express their potential, experience personal growth, and receive a sense of fulfilment from meaningful work ( $M = 4.21$ ). This can be attributed to increased appreciation and enjoyment of work, as well as mastery of life. The younger generation (18-25 years) exhibits the least experience of thriving at work or positive work assessment, reporting the highest burnout rate. Employers should draw attention to the fact that it is also essential for young people to be assessed for doing well as such evaluation can foster engagement and job performance.

The results do not show statistically significant differences in variables across groups by organization size, broken down into eight groups of every 700 employees ( $p \geq 0.05$ ). To analyze variations within the organization's staff (1 to 30 009), an approach was employed to segment them into eight equitable groups, each comprising approximately 700 employees. This indicates that the quantity of employees in the current research is not a critical factor in relation to the variables being examined.

There are statistically significant differences in most well-being subscales ( $p \leq 0.05$ ), except for the desire for involvement at work, in fourteen seniority groups (up to 6 months, 6 months to 1 year, and every 3 years) (Table 3).

*Table 3 Divergences in variable indicators among seniority groups (N=259)*

Variable subscale	Kruskal–Wallis H criterion	p
Interpersonal fit at work	24.31	0.028
Thriving at work	25.01	0.023
Feeling of competency at work	36.60	< .001
Perceived recognition at work	30.15	0.004
Desire for involvement at work	19.65	0.104
Relational authenticity	8.10	0.837
Exhaustion	16.18	0.239
Cynicism	12.65	0.475
Professional efficiency	34.62	<.001

The average for recognition at work shows that respondents with work experience from 18 to 21 years, express the highest level of satisfaction regarding their progress ( $M = 4.80$ ), as they also report more pronounced feelings about the realization of potential ( $M = 4.67$ ). The 6 months to 1 year group shows the lowest feelings of appreciation ( $M = 3.24$ ). Thus, emphasizing the evaluation of progress during the initial year of employment becomes crucial. Statistically significant differences have been identified in perceived recognition at work and exhaustion subscales ( $p \leq 0.05$ ) across three working model groups (in-office, hybrid,

remote). The results show that remote workers are most sensitive to the work evaluation ( $M = 4.10$ ), the hybrid model also reports a close value ( $M = 3.97$ ).

The lowest perceived recognition at work is observed among in-office workers ( $M = 3.72$ ). An interesting trend emerged - with the increased popularity of remote working, individuals working in physical office spaces appear to be somewhat overlooked in recent years. The data for exhaustion averages reflect the fact that in-office workers estimate exhaustion the most ( $M = 4.17$ ), while for remote workers it is the lowest ( $M = 3.22$ ).

A linear multi-factor regression model has been performed to investigate the effects of authenticity at work on burnout and well-being (RQ3). A statistically significant negative effect of relational authenticity on burnout was found ( $p < 0.001$ ), the model determination factor  $R^2 = 0.09$  shows that 9% burnout can be explained by the relational authenticity. The biggest significance for burnout is the relational authenticity for verse 3, "I purposefully hide my true feelings about some things so as not to upset my manager," so suppressing true feelings can contribute to emotional exhaustion that aligns with other studies. The statistically significant positive effect of the relational authenticity on the well-being, 8% of the well-being can be explained by the relational authenticity.

## **Discussion**

The study found out the relationship of staff authenticity with well-being and burnout. In particular, as the authenticity of the relationship increases, the well-being can improve, the feelings of professional efficiency can increase, and burnout can decrease. This finding, as well as the finding of the effect of relational authenticity on burnout and well-being, is consistent with the positive effect of authenticity on well-being found by other researchers (Kuntz & Abbott, 2017) and several studies that express the relationship of staff authenticity in the workplace with burnout as an integral aspect of employee well-being, linking low levels of authenticity with higher levels of burnout (van den Bosch & Taris, 2014; van den Bosch & Taris, 2018). Researchers have linked employee inauthenticity to burnout and alienation from themselves (Yagil & Medler-Liraz, 2014; Kim et al., 2023). The findings support the existing literature's assertion that well-being can foster the courage to exhibit authenticity (Wood, Linley, Maltby, Baliousis, & Joseph, 2008), or it can be a bidirectional interaction (Knoll et al., 2015).

Age, seniority and way of performing work have been found to be capable of leading to significant differences in the rates of merits and burnout. This is in line with previous well-being studies that have linked well-being to job characterization (Li & Lin, 2021).

Social well-being, which reflects positive functioning in society, namely social integration, feelings of belonging, is clearly associated with age differences, as a higher level of education promotes social relations (Keyes, 1998). Although



other studies confirm that age differences influence perceptions of authenticity and are a significant factor in examining the effects of authenticity on organizational outcomes (Ostermeier, Medina-Craven, Camp, & Davis, 2022), this study's measures of relational authenticity did not demonstrate such associations, possibly due to the limited sample size. It would be useful to study the differences in the authenticity of relationships in different occupational groups, examining how the appropriateness of work roles and the availability of work resources (autonomy, training and development opportunities, supervisor, colleague support) affect authenticity (Kuntz & Abbott, 2017; Metin et al., 2016).

### **Conclusions and recommendations**

There exists a relationship between the researched variables (RQ1), characterized by a positive relationship between relational authenticity and well-being, and a negative relationship between the exhaustion and cynicism burnout subscales. As the relational authenticity grows, well-being may slightly improve, exhaustion may decrease, and feelings of professional efficiency may increase. The perceived recognition at work primarily serves as a significant factor in mitigating the risk of burnout.

The response to RQ2, exploring variations in variable rates among groups, indicates that age, work experience, and work methodologies may result in noteworthy differences in well-being and burnout rates. However, these factors do not appear to yield significant variations in the rates of relational authenticity. The size of the organization, or the number of employees in the department, does not emerge as a determining factor for any of the variables being studied. The most noteworthy findings refer to the age group from 56 to 65 years, indicating the highest levels of prosperity and work appreciation. On the other hand, the 18–25 year old group expresses the least opportunities to showcase their potential, reports minimal job performance assessment, and registers the highest burnout levels. The 6 months to 1 year seniority group show the lowest assessments of interpersonal fit at work, thriving, sense of competence and sense of recognition. Remote workers exhibit the highest sensitivity to the investment assessment, whereas in-office workers, who concurrently report the lowest assessment of the investment, also experience the highest levels of exhaustion.

The relational authenticity affects burnout and well-being (RQ3). This may explain the research data: 9% burnout and 8% well-being. Increasing the relational authenticity reduces burnout and its risk. The primary factor to burnout development is the suppression of feelings, that can lead to emotional exhaustion as it consumes significant cognitive and emotional resources. The most common theme for research open questions is centered around communication, openness and trust, what also aligns with the literature's reported importance of these factors in boosting authenticity. It is advisable to implement awareness practices aimed

at fostering the authenticity of personnel, such as incorporating regular team sessions scheduled at least once a month. It will help become more conscious and accept yourself and be more present and truer every day. Based on responses from respondents, it is recommended to build new habits such as informal meetings, where individuals can openly and honestly share their feelings, challenges, and recommendations. To foster a positive shift and encourage more authentic expressions from younger staff, it is recommended to place a strong emphasis on effective onboarding processes throughout the initial year of employment.

It is advisable to offer consistent, growth-oriented feedback and job evaluations to enhance overall well-being, with a specific emphasis on in-office workers. In the context of burnout prevention, it is recommended to intensify the focus on the professional development of the 18-25 age group and restrict working overtime.

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**SABIEDRĪBAS VESELĪBA**  
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# DARBSPĒJAS PERSONĀM AR MUSKULOSKELETĀLĀM SASLIMŠANĀM

## *Working Capacity for Persons with Musculoskeletal Disorders*

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**Abstract.** *Musculoskeletal disorders (MSDs) are prevalent globally and result in substantial personal distress and significant social expenses for businesses and society. The ageing population and labor shortages exacerbate these effects. The aim of this study is to investigate the impact of MDS on employment absenteeism and presenteeism. Two instruments, the EQ-5D and the iPCQ, were used to quantitatively survey the Latvian population. 949 respondents of working age were surveyed. From this group, 553 respondents with MSD were selected, averaging 47 years old, 50.6% of whom were men. The results showed that 7.23% experienced absenteeism in the last month. Additionally, 45.9% reported discomfort at work due to MSDs. The EQ-5D-5L questionnaire revealed a decline in health-related quality of life with increasing age, highlighting the significance of addressing the aging workforce and promoting health preservation. 38.3% of respondents with MSDs received rehabilitation interventions, which showed a moderate association with health-related quality of life. The study showed that there is a negative correlation between health-related quality of life and productivity loss. This highlights the importance of comprehensive interventions that address both the physical and psychological aspects of MSDs. The findings offer valuable insights for policymakers, employers, and healthcare professionals to design targeted interventions that improve the health and productivity of individuals with MSDs.*

**Keywords:** *absenteeism, musculoskeletal disorders, presenteeism, quality of life.*

## **Ievads**

### ***Introduction***

Muskuloskeletālās saslimšanas (MSS) attiecas uz kustību-balsta sistēmas darbību un ietver vairāk nekā 150 dažādas iedzimtas vai iegūtas slimības. Šie traucējumi var izraisīt sāpes un funkciju samazinājumu vai zudumu, pazeminot spēju strādāt un piedalīties sabiedriskajā dzīvē (WHO, 2022). MSS ir viens no visvairāk invaliditāti izraisošajiem un resursu ietilpīgākajiem stāvokļiem gan pasaulē (GBD 2019 Child and Adolescent Communicable Disease Collaborators, 2023), gan Eiropas Savienībā (de Kok et al., 2019), gan Latvijā (World Bank,

Disability Policy and Disability Assessment System in Latvia [DPDASL], 2020), saistīts ar ilgu darba prombūtni un skar visu nozaru pārstāvjus (Hansen, Fast, & Wangen, 2023). MSS ietekmē ne tikai pašas personas un viņu piederīgos, bet arī rada lielas izmaksas uzņēmumiem un sabiedrībai. Latvija ir valsts ar 1'9 miljoniem iedzīvotāju. Lai nodrošinātu ekonomisko izaugsmi, ir jākoncentrējas uz produktivitāti, kas Latvijas kontekstā ir saistīta ar cilvēkkapitālu. Raugoties nākotnē, galvenās problēmas ir vidēji kvalificēta darbaspēka novecošanās un augsti kvalificēta darbaspēka trūkums. Divas trešdaļas Latvijas darbaspējīgā vecuma cilvēku ar invaliditāti nepiedalās darba tirgū (DPDASL, 2020; Bārzdiņš & Konstance, 2018). Tas ir izaicinājums strauji novecojošai valstij. Līdz ar to būtiska nozīme ir esošā darbaspēka veselības saglabāšanai un uzlabošanai (Latvijas produktivitātes ziņojums 2022, 2023). Lai atjaunotu un saglabātu darbaspējas, saskaroties ar MSS, nepieciešama ārstēšana, kas var iekļaut dažādas intervences, kā arī dzīves veida izmaiņas (Moley, 2022). Pacientu līdzestība terapijai ir atkarīga no daudziem faktoriem gan iekšējiem kā personības un uzvedības, gan ārējiem, kas saistīti ar veselības aprūpes sistēmu, piemēram, sadarbība ar ārstējošo ārstu un terapijas pieejamību (Upmale-Puķīte & Gulbe, 2019). Maksājumi no “savas kabatas” par veselības aprūpi Latvijā ir ievērojami augstāki (36 %) salīdzinājumā ar ES vidējo rādītāju (15 %) un privātās apdrošināšanas segums ir mazs (3,6%). Tas ir saistīts ar valsts apmaksāto pakalpojumu minimālo līmeni, kas nesedz lielāko daļu rehabilitācijas pakalpojumu (OECD and European Observatory on Health Systems and Policies [OECD&EOHSP], 2022), kas ir svarīgi MSS klīniskajā ceļā (Moley, 2022).

Lēmumu būt prombūtnē saslimšanas dēļ (*absenteeism* - angļu val.) vai būt darbā, neskatoties uz veselības ierobežojumiem (*presenteeism* – angļu val.), ietekmē vairāki faktori, ne tikai saslimšanas smagums, bet arī personiskie un darba vides faktori. No organizācijas puses darba apmeklējumu var ietekmēt prasības, organizācijas struktūra un kultūra kā arī darbinieku integrācija darba vidē. Personiskā motivācija, attieksme, produktivitātes mērķi kā karjeras izaugsme vai finansiālais spiediens un nodarbinātības saglabāšanas riski var ietekmēt darbinieka lēmumu būt darba vietā (Johns, 2010; Ray et al., 2012). Darba apmeklējums saslimšanas laikā var ietekmēt darbinieku produktivitāti un efektivitāti kā arī veicināt veselības problēmu pasliktināšanos (Lohaus & Habermann, 2019). Tomēr, tā kā veselības uzvedība ir saistīta ar subjektīviem faktoriem kā zināšanas, pārliecības, attieksme un motivācija (Ļevina & Freimane, 2019), arī lēmumu par darba kavējumu var uzskatīt arī kā adaptīvu mehānismu (Karanika-Murray & Biron, 2020).

Tika veikts pētījums ar mērķi izpētīt MSS ietekmi uz darba sniegumu un prombūtni kā arī izvērtēt ar veselību saistītās dzīves kvalitātes dimensiju saistību ar snieguma samazinājumu. Tika veikta kvantitatīva Latvijas iedzīvotāju aptauja, izmantojot divus instrumentus – ar veselību saistītas dzīves kvalitātes un darba prombūtnes un produktivitātes izmaksu aptauja.

## Metodoloģija Methodology

Kvantitatīvā šķērsgriezuma pētījumā izmantota darbspējīga vecuma (18-64.g.v.) iedzīvotāju aptauja, lai identificētu ar veselību saistītās dzīves kvalitātes pašnovērtējumu un darba prombūtni un snieguma pašnovērtējumu.

Produktivitātes izmaksu aptauja (*The iMTA Productivity Costs Questionnaire* (iPCQ)) (institute for Medical Technology Assessment, 2024) aptauja sastāv no 18 jautājumiem, no tiem 9 ir vispārīgi jautājumi, lai apkopotu demogrāfisko informāciju, piemēram, vecumu, dzimumu un respondentu darba statusu (piemēram, algota darba stundu skaits nedēļā un darba dienu skaits nedēļā). Produktivitātes zudumi tiek mērīti trīs atsevišķos moduļos – prombūtne no algota darba, profesionālais sniegums un neapmaksātā darba produktivitātes zudums. Anketa izmanto atsaukšanas periodu 4 nedēļas.

Ar veselību saistītās dzīves kvalitātes aptauja EQ-5D-5L (EuroQol Research Foundation, 2024) sastāv no divām daļām: veselības stāvokļu aprakstošās sistēmas un vizuālās analogās vērtēšanas skalas (EQ-VAS). Aprakstošā sistēma reģistrē pašu ziņoto problēmu līmeni katrā no piecām klasifikācijas dimensijām (mobilitāte (*mobility* - angļu val. (MO)), pašaprūpe (*self-care* - angļu val. (SC)), ikdienas aktivitātes (*usual activities* - angļu val. (UA)), sāpes/diskomforts (*pain/discomfort* - angļu val. (PD)), trauksme/depresija (*anxiety/depression* - angļu val. (AD))). Katrai dimensijai respondentam tiek lūgts izvēlēties vienu no 5 variantiem: bez grūtībām, maznozīmīgām, mērenām vai nopietnām grūtībām un nespēju. VAS galapunkti ir apzīmēti kā "labākais iedomājamais veselības stāvoklis" un "sliktākais iedomājamais veselības stāvoklis", kuru pamatā ir attiecīgi 100 un 0.

Aptauja tika veikta 2023.gada martā, izmantojot interneta aptauju. Lai iegūtu precīzākus rezultātus, aptauja bija divās valodās – latviešu un krievu. 71% no aptaujātajiem to izvēlējās veikt latviešu valodā.

## Rezultāti

Kopējais respondentu skaits 949 darbspējīgas vecuma cilvēki, vidējais vecums 45 gadi, no kuriem 50,5% bija vīrieši un 49,5% sievietes. Tālākai datu apstrādei tika atlasīti respondenti, kuriem pēdējā gada laikā bija kādas kustību-balsta sistēmas saslimšanas (n=553) ar vidējo vecumu 47 gadi (SD 12,26), 50,6% vīrieši un 49,4% sievietes. Respondentu demogrāfiskās īpašības apkopotas 1.tabulā.

1. tabula. Respondentu demogrāfiskais raksturojums  
Table 1 Demographic characteristics of respondents

Demogrāfiskās īpašības		Skaits	
		n	%
Dzimums	Vīrietis	280	50,6,
	Sieviete	273	49,4
Vecums	18-24 g.v.	32	5,7
	25-34 g.v.	113	20,4
	35-44 g.v.	110	19,9
	45-54 g.v.	138	24,9
	55-65 g.v.	160	29,1
Izglītība	Pamata	3	0,5
	Vidējā	202	36,5
	Augstākā	348	62,9

n=553

MSS dēļ pēdējā mēneša laikā no darba prombūtnē bijuši 7,23% (n=40) respondenti, vidēji 39 stundas. Pēdējā mēneša laikā darbā MSS izraisītās fiziskās vai psiholoģiskās diskomfortu izjutuši 45,9% (n=254) respondenti, vidēji 8,5 stundas mēnesī. Savs sniegums darbā biežāk tika novērtēts uz 7 (SD 2) no 10. 16% (n=87) respondentiem MSS dēļ pēdējā mēneša laikā bija grūtības veikt neapmaksātus darbus.

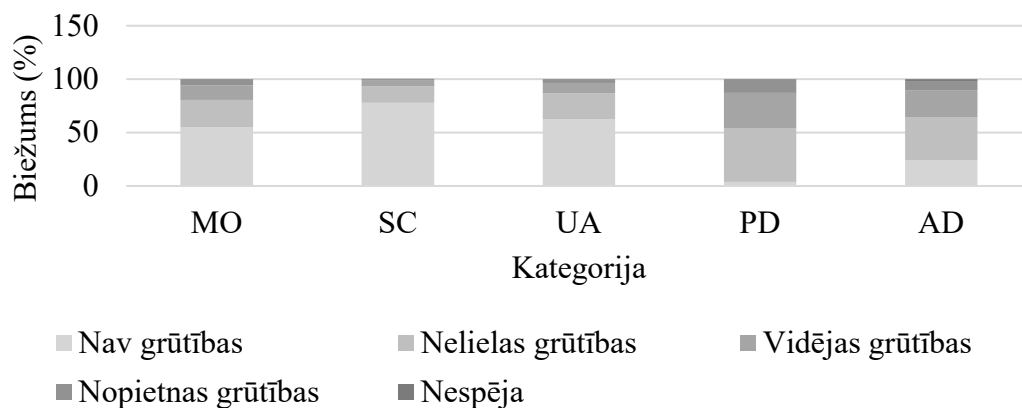
Aprakstošās statistikas dati par respondentu skaitu, kas MSS dēļ bijuši prombūtnē, darbā izjutuši fizisku vai psiholoģisku diskomfortu un nebija spējīgi veikt citus darbus, sadalīti pa vecuma grupām, iekļauti 2.tabulā.

2. tabula. Aprakstošā statistika pa vecuma grupām  
Table 2 Descriptive statistics per age group

Vecuma grupa	Prombūtne MSS dēļ (%)	Diskomforts darbā MSS dēļ (%)	Traucēts neapmaksātais darbs (%)
18-24	3,1	1,1	44,4
25-34	2,7	8,9	11,5
35-44	6,4	8,5	11,8
45-54	8,0	12,3	13,1
55-65	10,6	15,4	18,0

1.attēls parāda ar veselību saistītās dzīves kvalitātes atsevišķo veselības kategoriju problēmu biežumu, izteiktu procentuāli. Dati norāda, ka lielākās grūtības vērojamas sāpju/diskomforta un trauksmes/depresijas kategorijās.

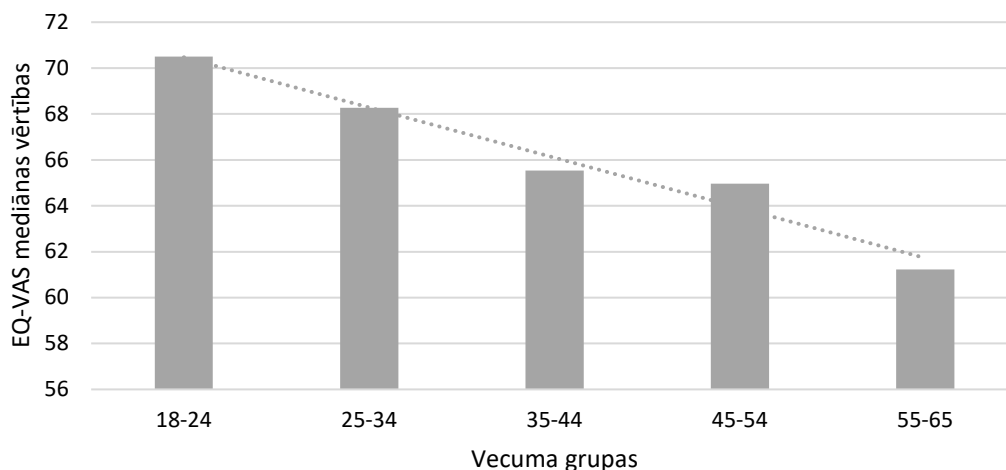




Kategorijas: mobilitāte (MO), pašaprūpe (SC), ikdienas aktivitātes (UA), sāpes/diskomforts (PD), trauksme/depresija (AD)

1.attēls. *Dzīves kvalitātes dimensijas un proporcijas*  
 Figure 1 *Dimensions and proportions of quality of life*

EQ-VAS norāda kopējo veselības novērtējumu, iespējams iekļaujot arī tās veselības dimensijās, kas netiek aprakstītas atsevišķajās EQ-5D-5L kategorijās. 2.attēlā vērojams, ka palielinoties vecumam, strauji samazinās veselības pašnovērtējums (Kruskal-Wallis 10,23;  $p=0,0367$ ). Kopējais mediānas rādītājs 64 (SD 15,39) punkti no 100.



2.attēls. *Veselības pašnovērtējums*  
 Figure 2 *Health self-assessment*

Lai izvērtētu EQ-5D-5L vērtības indeksus, atbilstoši valstu grupas klasterim, tika izmantotas Polijas datu vērtības (Laszewska et al., 2020; Golicki et al., 2019). 3.tabulā apkopota informācija ar Shannon indeksu, kas parāda EQ-5D dimensiju rezultātu datu kopā. Dati kopumā ir salīdzinoši daudzveidīgi un maksimālais iespējamais informatīvais daudzums katrā kategorijā ir līdzsvarots. Tā kā J' vērtības ir tuvinātas "1", izņemot pašaprūpes kategoriju, dati kopumā ir salīdzinoši vienmērīgi sadalīti.

3. tabula. **Shannon indekss ar veselību saistītās dzīves kvalitātes kategorijām**  
 Table 3 **Shannon index for health-related quality of life categories**

Shannon indekss	MO	SC	UA	PD	AD	Kopīgi
H'	1,64	1,02	1,44	1,63	1,94	5,91
H' max	2,32	2,32	2,32	2,32	2,32	11,61
J'	0,7	0,44	0,62	0,7	0,84	0,51

*H'* - nosaka daudzveidību; *H' max* – maksimālās daudzveidības indekss; *J'* -vienmērības indekss. Kategorijas: mobilitāte (MO), pašaprūpe (SC), ikdienas aktivitātes (UA), sāpes/diskomforts (PD), trauksme/depresija (AD)

Vērtību indekss norāda veselības kopējo raksturojumu, kur, tuvinoties vērtībai “1”, pašnovērtētais veselības stāvoklis atbilst “iespējami labākais”. 4.tabula norāda, ka, palielinoties vecumam, samazinās veselības kopvērtējums.

4. tabula. **Vērtību indeksa raksturojums pa vecuma grupām**  
 Table 4 **Characteristics of the value index by age groups**

Vecuma grupa	vidējais	SD
18-24	0,8721	0,1359
25-34	0,8962	0,09806
35-44	0,8798	0,1824
45-54	0,8510	0,1740
55-65	0,83991	0,1639

Pastāv vidējas negatīvas saistības starp ar veselību saistītās dzīves kvalitātes līmeņa summas rādītājiem ar produktivitātes samazinājumu ( $r=-0,421$ ;  $p<0,0001$ ). Respondentu grupām ar grūtībām pašaprūpē ( $r=-0,547$ ;  $p<0,0001$ ), mobilitātē ( $r=-0,471$ ;  $p<0,0001$ ), ar trauksmi/depresiju ( $r=-0,428$ ;  $p<0,0001$ ) bija lielākās saistības ar darbaspēju pašnovērtēšanu kā grupām ar sāpēm/diskomfortu ( $r=-0,401$ ;  $p<0,0001$ ) un ikdienas aktivitāšu ierobežojumu ( $r=-0,395$ ;  $p<0,0001$ ). Starp ar veselību saistītās dzīves kvalitātes komponentiem un prombūtni tika konstatētas zemas korelācijas vērtības ( $<0,30$ ).

Nosakot saistības starp veselības vērtību indeksu ar ienākumu līmeni uz katru personu mājražniecībā, respondenta izglītības līmeni un vecumu, tika veikta lineārās regresijas analīze. Dati, kas apkopoti 5.tabulā, norāda, ar veselību saistītā dzīves kvalitāte paaugstinās, pieaugot ienākumu lielumam uz katru mājražniecības personu un respondenta izglītības līmeni, bet samazinās ar vecumu, tomēr R-kvadrāta līmenis ir salīdzinoši neliels. Modelī ar izglītības līmeni un vecumu ir augstāka būtiskuma vērtība, bet modelī ar ienākumu līmeni uz mājražniecības personu regresija ir precīzāka, jo mazāka standartkļūda.

5. tabula. **Modeļu raksturojošie dati**  
Table 5 **Model data**

Modelis	Slope	Y-intercept	p	R-squared	SD
1.	0,00002976	0,8349	0,0064	0,01341	0,1602
2.	0,02469	0,7889	0,0016	0,01793	0,1598
3.	-0,00198	0,9546	0,0004	0,02245	0,1594

Modelis: 1. veselības vērtību indekss un ienākumu līmenis uz mājsaimniecības personu; 2. veselības vērtību indekss un izglītības līmenis; 3. veselības vērtību indekss un vecums

Netika konstatētas būtiskas atšķirības ar veselību saistītās dzīves kvalitātes pašnovērtējumā starp dzimumiem. Sliktāks dzīves kvalitātes pašnovērtējums bija respondentiem bez augstākās izglītības un bez darba ( $p < 0,0001$ ).

Rehabilitācijas intervences MSS dēļ bija saņēmuši 38,3% ( $n=212$ ) respondenti, no kuriem 39,6% ( $n=84$ ) vīrieši un 60,4% ( $n=128$ ) sievietes. Rehabilitācijas pakalpojumu saņēmušo vidējais vecums 47,5 gadi, biežāk to izmantojuši vecuma posmā no 45 gadiem (60,4%). Pastāv nelielas, bet statistiski nozīmīgas atšķirības ( $p=0,0373$ ) veselības vērtību indeksā starp šīm grupām, atšķirība vidējos rādītājos ir  $-0,03 \pm 0,014$ . No dzīves kvalitātes komponentiem atšķirības vērojamas sāpju līmeņa pašnovērtēšanā, rehabilitāciju apmeklējuši respondenti ar augstāku sāpju atzīmi, atšķirība starp grupām ir statistiski ticama ( $p=0,0099$ ) un mērena  $0,18 \pm 0,07$ . Rehabilitācija pakalpojumu izmantojušo respondentu personīgo mēneša ienākumu lielums ir augstāks, tomēr nav statistiski nozīmīgas atšķirības starp grupām ( $p=0,1138$ ).

Kronbaha alfas saskaņotība EQ-5D-5L aptaujai 0,738 un iPCQ 0,762, kas liecina par augstu piemērotību.

## Diskusija

Pētījuma dati sakrīt ar OESD sniegto informāciju par MSS augsto izplatību Eiropā (de Kok et al., 2019). No visiem aptaujas dalībniekiem 58% bija kādas kustību - balsta saslimšanas pēdējā gada laikā. 7% gadījumu respondentiem bijušas neilgas prombūtnes MSS saslimšanas dēļ, kas atšķiras no iepriekš minētajiem ziņojumiem (OECD&EOHSP, 2022; DPDASL, 2020). Tomēr jāņem vērā, ka prombūtne nav vienīgais rādītājs, kas norāda uz personu ar MSS veselības stāvokli, bet arī snieguma samazinājums vai traucēts neapmaksātais darbs. Dati norāda, ka darbs bez atalgojuma tika traucēts 16% no visiem respondentiem, īpaši vecuma grupā līdz 25 gadiem. Pētījuma dati atklāj, ka 46% aptaujāto vismaz 1 dienu mēnesī izjut fizisku vai psiholoģisku diskomfortu MSS dēļ, kas samazina viņu produktivitāti.

Tā kā pastāv saistības starp ar veselību saistītās dzīves kvalitātes līmeni un produktivitāti, īpaši, ja grūtības rada pašaprūpe un mobilitāte, vai ir trauksmes/depresijas problēmas, tas norāda, ka šie aspekti ietekmē produktivitātes

samazināšanos. Jāatzīmē, ka psiholoģisks diskomforts tika novērtots 76,1% gadījumu. Karanika-Murray (Karanika-Murray & Biron, 2020) piedāvā izvērtēt snieguma samazināšanos kā adaptīvu uzvedību, lai līdzsvarotu darba spējas veselības stāvoklim. Viņa piedāvā izvērtēt snieguma un veselības stāvokļa attiecības, izdalot funkcionālu, disfunkcionālu, pārmērīgu un terapeitisku uzvedību. Šāds dalījums normalizē saslimšanas esamību un palīdz izvērtēt atbilstošo resursu nepieciešamību. Pēc viņas uzskatiem vērtība jāpievērš personām ar sliktu veselības novērtējumu un vāju produktivitāti vai sliktu veselību un pārmērīgu produktivitāti, jo šāda rīcība ir veselībai un sniegunam kaitīga, īslaicīgi izdevīga. Ņemot vērā pētījuma datus šādā griezumā, disfunkcionāla uzvedība būtu vērtējam 5% gadījumu, bet 20% - pārmērīga. Tas norāda, ka būtiski izprast un risināt šo adaptīvo uzvedību, lai nodrošinātu ilgtermiņa veselību un sniegumu.

Savukārt, Krols (Krol, Hosseinnia, Brouwer & van Roijen, 2023) norāda uz EQ-5D-5L instrumenta izmantošanu no darba prombūtnē un produktivitātes samazinājuma prognozēšanā. Pētījuma dati apstiprina, ka pastāv sakarība starp ar veselību saistītās dzīves kvalitātes un darba produktivitātes pašnovērtējumu. Pētījuma tika noteikta lielāka sāpju un fiziska diskomforta kā arī trauksmes vai depresijas kā psiholoģiska diskomforta pārkums par citām ar veselību saistītās dzīves kvalitātes funkciju dimensijām. Tomēr, kā iepriekš minēts, lielāku ietekmi uz darba spējām šajā pētījumā radīja pašaprūpes un pārvietošanās grūtības kā arī trauksme/depresija. Tas atšķiras no Koń un Jakubczyk (Koń & Jakubczyk, 2023) Polijas populācijas pētījuma Covid 19 laikā, kurā būtiskāka ietekme prombūtni un produktivitāti bija mobilitātes, sāpju/fiziska diskomforta un ikdienas aktivitātes ierobežojums. Tomēr jāņem vērā pētāmās populācijas atšķirības pēc veselības stāvokļa un pandēmijas ietekmes (Ludwig, Ramos-Goñi, Oppe, Kreimeier & Greine, 2021).

Pieaugot vecumam, samazinās ar veselību saistītā dzīves kvalitāte, neatkarīgi no dzimuma un nodarbošanās. To spilgtāk raksturo EQ-VAS rādītājs. Šeit jāatzīmē, ka respondenti bez darba un bez darba veselības stāvokļa dēļ, kopā 9%, uzrāda sliktāku ar veselību saistītu dzīves kvalitāti. Augstāks izglītības līmenis un ienākumi uz katru mājsaimniecības personu ietekmē labāku veselības pašnovērtējumu, kas saskan ar OECD datiem (OECD&EOHSP, 2022).

Rehabilitācijas pasākumi var uzlabot dzīves kvalitāti (Beemster et al., 2019), tomēr to izmantošana ir salīdzinoši maza, vairāk to saņēmušas sievietes un personas pēc 45 gadiem. Kaut gan netika novērotas lielas atšķirības starp veselības vērtības indeksu, iespējams, būtisks ir sāpju sindroms. Atšķirībā no OECD informācijas (OECD&EOHSP, 2022), ienākumu līmenim nav būtiskas ietekmes uz rehabilitācijas pakalpojuma saņemšanu.

Pētījuma dati ļauj izprast sarežģītās attiecības starp ar veselību saistītās dzīves kvalitāti un profesionālo prombūtni vai snieguma samazinājumu. Pētījumā

iegūtie dati ir noderīgi, lai veiktu padziļinātu izpēti par ieguvumiem no rehabilitācijas personām ar MSS no sabiedrības perspektīvas.

### **Kopsavilkums**

Šī pētījuma mērķis bija izpētīt MSS ietekmi uz darba sniegumu un prombūtni, kā arī izvērtēt ar veselību saistītās dzīves aspektu saistību ar snieguma samazinājumu. Pētījumā piedalījās 553 respondenti ar MSS, vidējais vecums bija 47 gadi, no kuriem 50,6% bija vīrieši un 49,4% sievietes.

Iegūtie dati atklāj negatīvu saistību starp ar veselību saistītās dzīves kvalitātes un produktivitātes samazinājumu. Biežākās grūtības MSS dēļ tiek novērotas fiziska vai psiholoģiska diskomforts. Veselības stāvoklis lielākā mērā ietekmē produktivitātes zudumu kā prombūtni. Analīze liecina, ka trauksme/depresija, pašaprūpes un pārvietošanās grūtības lielākā mērā ietekmē darba sniegumu. Pētījums norāda, ka ar veselību saistītās dzīves kvalitāte samazinās, pieaugot vecumam, bet augstāks izglītības un ienākumu līmenis pozitīvi ietekmē pastiprinoši.

Rehabilitācijas pakalpojumu izmantošana MSS terapijā vairāk saistīta ar individuālām veselības vajadzībām nevis saistībā ar veselības līmeni.

Pētījums piedāvā nozīmīgu ieguldījumu izpratnē par MSS ietekmi uz darba sniegumu un sabiedrības veselību.

### **Summary**

The aim of this study was to investigate the impact of musculoskeletal disorders (MSDs) on work performance and absenteeism and to assess the association of health-related aspects of life with performance decline. The study included 553 respondents with MSD, mean age 47 years, of whom 50.6% were male and 49.4% were female.

The data showed a negative association between health-related quality of life and reduced productivity. The most common difficulties due to MSDs are observed to be physical or psychological discomfort. Health status has a greater impact on productivity loss than absenteeism. The analysis shows that anxiety/depression, self-care and mobility difficulties have a greater impact on work performance. The study shows that health-related quality of life decreases with increasing age, but higher levels of education and income have a positive reinforcing effect.

The use of rehabilitation services in MSDs therapy is related to individual health needs rather than health status.

The study makes an important contribution to understanding the impact of MSDs on work performance and public health.

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# METHODS AND ACTIVITIES OF HEALTH COMPETENCE DEVELOPMENT IN NON-FORMAL ENVIRONMENT: EXPERIENCE OF CHILDREN WITH TYPE 1 DIABETES MELLITUS

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**Abstract.** *Diabetes mellitus is a disease when certain processes in the body, which maintain a normal blood glucose concentration, get imbalanced. Research object is educational methods and activities used for the development and training of health competence. The aim of the research is to reveal educational methods and activities used for the development of health competence in non-formal environment, based on the experience of children with type 1 diabetes mellitus. Research methods: theoretical – analysis, comparison, and generalization of scientific literature; empirical – the use of focus group discussions with children with diabetes mellitus for data collection; Empirical research revealed that various educational methods and activities aimed at developing health competences are carried out for children with type 1 diabetes mellitus in non-formal educational environments (medical facilities, summer camps and health camps). The following activities and classes are used in medical facilities: lessons, conversations, questionnaires, and games. Activities used in summer camps are as follows: walks, cycling, games designed to develop physical activity skills. In the educational environment of health camps, the following educational methods and activities are used for the development of health competence for children with type 1 diabetes mellitus: lessons, games, educational activities, trips, and creative activities.*

**Keywords:** *children, educational activities and methods, health competence, type 1 diabetes mellitus.*

## Introduction

Good control of the disease is important for children with type 1 diabetes mellitus, because the quality of disease control, children's knowledge, skills, and approach determine whether damage to other organs or complications that will further impair the child's health will occur later in life (Sherif, Kralev, Slavov, & Kunchev, 2020). Diabetes mellitus causes damage not only to the endocrine system and various organs, but also failure of certain organs (McKendree & Piscatelle, 2021; Bozkurt, Atay, Bilir, Ertekin, Bugra-Koca, & Sabaner 2021; Bulikaitė, 2022). Health competence, which helps to better control the disease and



prevent the development of complications, is important for children with type 1 diabetes mellitus. One of the health competence skills is to follow the principles of a balanced and health diet, i.e. to be able to choose food products and meals that are healthy and useful for the body, and those that can be consumed by people with type 1 diabetes. Maintaining positive relationships with others and having a sense of security (being able to relate to other children and not feel different) is also important for children with diabetes mellitus (Gudžinskienė 2000, 2013). Another important health competence skill is the favourable self-evaluation and management of emotions: it is essential for a child with type 1 diabetes not to give in to negative emotions, but to evaluate oneself favourably.

Researchers emphasize that health competence knowledge about type 1 diabetes, its care and treatment, control of the disease, consequences of the disease and how to avoid them, healthy and balanced diet are very important (McKendree et al., 2021; Bozkurt et al., 2021). The analysis of scientific literature revealed health competence skills related to the child's disease: monitoring blood sugar, knowing how to test blood sugar, injecting insulin and choosing injection sites, calculating insulin doses on the basis of food products, choosing food products and calculating carbohydrates and fats, recognizing acute condition, and quickly taking action (Bozkurt et al., 2021). Health competence skills (specific) are related to the control of the disease, since they all contribute to easier and better management of the type 1 diabetes and stop the progression of the disease.

However, the success of the development of health competence depends on the methods and activities used in developing children's health competence. The active involvement of children and their level of learning also depend on the variety of educational methods (Gudžinskienė 2000, 2013).

Accordingly, the following article seeks to reveal educational methods and activities used in non-formal environments for the development of health competence in children with diabetes, by answering the problematic question: Which of the educational methods and activities are attractive/unattractive for children with diabetes when developing health competence?

**Research object:** educational methods and activities used for the development and training of health competence.

**Research aim** is to reveal teaching and learning methods and activities used in non-formal educational environments for the development of health competence, based on the experience of children with type 1 diabetes mellitus.

**Research methods:** theoretical – analysis, comparison and generalization of scientific literature; empirical – use of the focus group interview method for data collection; use of the content analysis method for the analysis of research data.

**Research questions:**

1. How do educational methods and activities promote the development of health competence?

2. Which of the methods help children better understand and assimilate information, develop skills and healthy lifestyle values?

### **Research methodology**

**Research methods.** Qualitative research type was chosen for the study. The purpose of a qualitative study is to disclose experiences of children with diabetes, the teaching and learning methods and activities used for the development of health competence in non-formal educational environments, based on the experience of children with type 1 diabetes mellitus (Yin, 2009).

The method of a semi-structured interview was used in the research. This article overviews problematic question of the research: “How would you like health educators to communicate knowledge about type 1 diabetes mellitus? What activities and classes did best provide information and help to develop healthy lifestyle skills?” The obtained data were analysed by using the content analysis method. The qualitative content analysis was performed in the following sequence: the repeated reading of the content of transcribed interview texts, the distinction of meaningful elements in the text analysed, the grouping of the distinguished meaningful elements into topics and sub-topics, integration of the topics/sub-topics into the context of the phenomenon analysed and the description of their analysis (Mayring, 2014). The content analysis is a valid method for making specific inferences from the analysed text (Ivaškienė & Malinauskienė, 2021).

**The sample of the research.** A criteria-based sample was used in the research. The respondents were chosen according to the following criteria: 1) children with diabetes mellitus; 2) children who suffer from diabetes from the age of 7 to the age of 15; 3) children who found out about the disease at least one year ago. The study was conducted in August 2021. The duration of the interview was 120 minutes. 7 children with diabetes mellitus participated in the qualitative research. The age of research participants ranged from 8 to 15 years. There were 5 girls and 2 boys who participate in the research.

**Ethics of the research.** Parents of children who participated in the research, as well as children themselves familiarised with the goal of the research, the interview questions, and the importance of a reasoned reflection on their experience. A parental consent of all research participants was obtained, allowing their children to participate in the research, including the agreement of parents and children to record the interview into a voice recorder.

When analysing the results of the study, the characteristics of the study participants are presented generally while ensuring that personal information, which would allow to recognise a particular participant of the study, will not be presented, the anonymity and confidentiality of the participants and non-disclosure of personal identity information had been guaranteed, the names of the

study participants encoded in letters A, B, C, D, E, F and G. It encoded data of all the study participants are available only to the researcher.

## Research results

**Educational activities and methods used in the environments of health competence development for children with type 1 diabetes.** The findings of the *focus* group discussion revealed that various educational methods, strenuous activities, and classes are used in the environments of health competence development. (Fig.1). Therefore, with the help of games and various puzzles, children with type 1 diabetes mellitus could learn to choose suitable food products, how to calculate the number of carbohydrates and fats in food products, and how to observe personal hygiene.

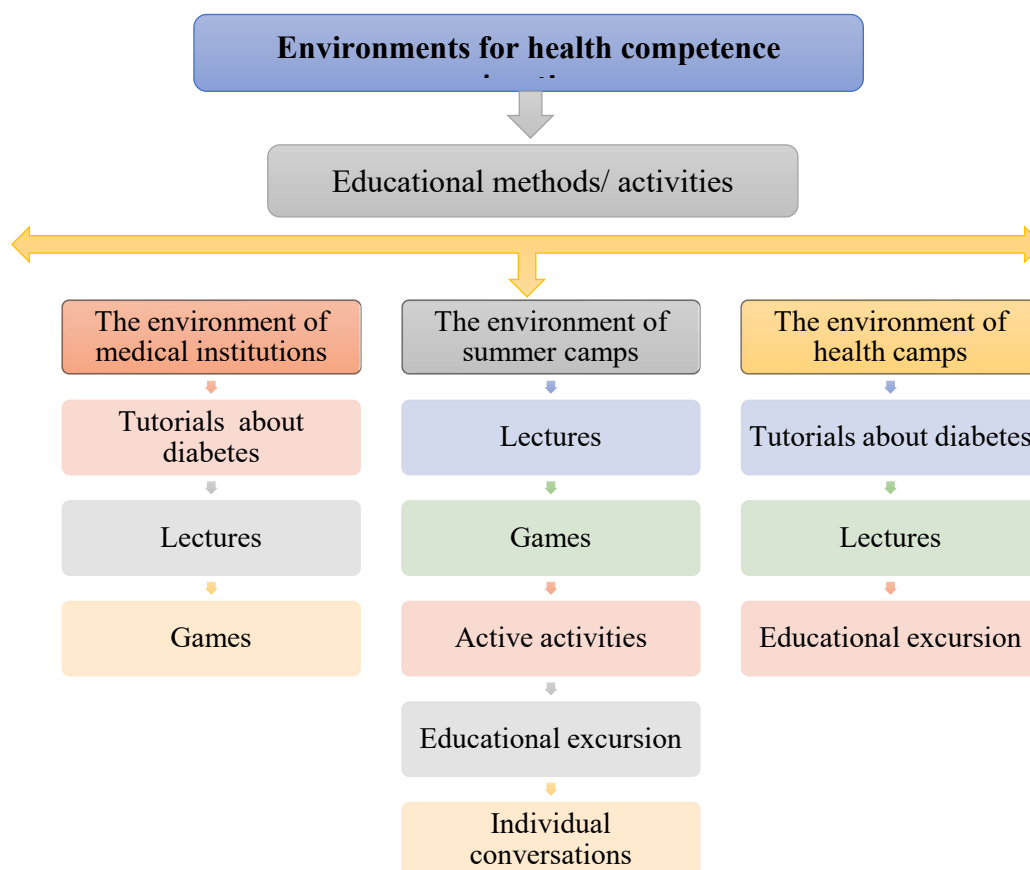


Figure 1 Educational methods /activities used for children with diabetes

The research showed that the first environment for the development of health competence is the environment of medical institutions. The research found that **the following educational methods and various activities are applied in medical institutions:**

*“In Klaipėda, in the hospital, there’s also a diabetes educator there, and they give a sheet to count carbs, to measure sugar, and her name is [name], and*

*we talk with her, I learn more, because she still tells something new. For example, when it's a casserole, you need to inject twice, when it's pasta casserole, you need to inject twice, and so on. So, they help me learn more there, now, when my sugar is 12, I need to inject already. <...> It used to be in the hospital, those with diabetes gathered and there were like games, but I don't remember well, because now they give questionnaires to solve about diabetes, but not anymore, because it's covid now." (D)*

*There are also classes in clinics, we also count carbs there, then we learn how much insulin we need to inject and when, classes are like that." (G)*

Accordingly, in the environment of medical institutions, children with diabetes are provided with knowledge, their skills and value attitudes are developed using the following educational activities: classes, conversations, filling in surveys, questionnaires about diabetes, their discussion, and games. By using a variety of methods, activities, and classes, children are more actively involved in the process of health competence development. Improving the performance of learners is related to the change of activity and rest, while active participation in the learning process by using various educational methods helps children learn more and form knowledge (Gudžinskienė, 2000, 2013). The education must respond to the learner's needs and must be student oriented (Ivaškienė et. al., 2021). In order or the following to be achieved, first of all, it is necessary to fully get to know the students, take into account students' individual and special needs and opportunities, apply various traditional and innovative teaching methods, forms, and tools that would help each student to have a quality education. Thus, it is important that the knowledge of health competence, the development of skills, and formation of value attitudes are presented in an interesting way, using various educational methods.

The analysis of the *focus* groups discussion revealed the following **strenuous activities that are used in summer camps for children with diabetes mellitus**: walks, cycling, games. According to the research participants:

*"In the "Smalsučiai" camp, there were two groups from 10 to 15 years old and then older. The first group was always for the smaller, and the second group – for the older. So, then I was smaller, I was in the second group, and we went for walks, then we separately went to eat, because there were no healthy there, so we had to go to another café, later we went to see how dolphins swim, we drove there, we went there with bikes, I don't really remember... There was [name], one helped everyone with their sugar." (D)*

*"Well, there are various activities in the camps: we play outside all kinds of sports games, there are creative activities, well, for example, we draw on t-shirts, then there are also consultations, well such conversations where we can talk about what worries us and what questions we have." (A)*

Hence, activities used in the environment of summer camps (walks, cycling, games) are intended for the development of physical activity skills and to form

value attitude that sports and active physical activities improve the state of health. Another important aspect is that summer camps develop children's creativity skills, which free the children's mind and thus, improve emotional health. Therefore, diabetes camps develop health competence through activities, games, unleashing creativity and providing consultations related to disease management (monitoring and managing sugar levels).

The analysis of the *focus* group discussion highlighted the following **activities and classes used for the development of health competence in health camps**: lessons, games, educational programmes, trips, and creative activities. Research participants noted that:

*"You attend those procedures, procedures are placing such heating packs, and such a device is placed on the belly, then there are exercises, massages, and then from twelve you have a whole day free, sometimes there are baths, and there are also classes, there are a lot of activities there. Last Thursday we went to Trakai, wait last one... There are trips like that, I've learned about new pumps and sensors <...> I was here in the school with Chinese when they came here, and I wasn't there anymore. It was not so long ago, those Chinese women gave us pastry tubes, we cooked such snacks, we also went to Trakai. I liked it there too, but not so much, I don't quite like driving, I'm like at home, I want to stay more at home, I don't go anywhere." (D)*

*"We play basketball or with cards, main activities here, and also square. And I like these lessons, there, where we cook food, where we count carbs using new ways." (E)*

*"So, active games, as my friend mentioned, and we also come to lessons, where's there [name] and the nurse, we cook food and count carbs, and we learn to count. Yes, I like these lessons." (B)*

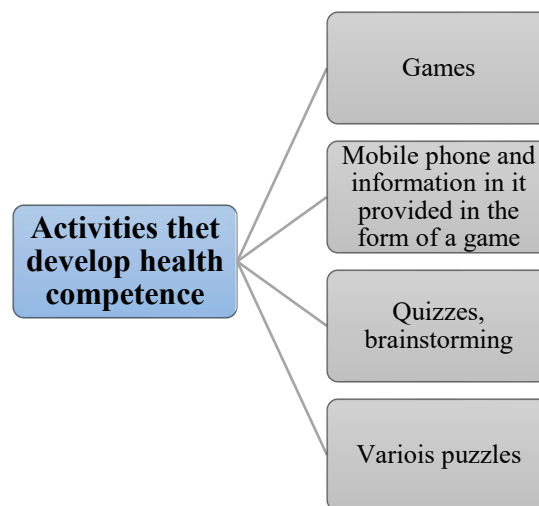
*"There are also educational programs, sensors, they speak about technologies. Little children draw and count carbs <...> Tables to colour, what a good glucose is, like a traffic light to small children, or to draw." (F)*

*"Well, there are a few procedures in the morning, that's all, there's no more, so there are actually no procedures, sometimes there are some activities or lessons, they speak about diabetes mellitus." (A)*

The research found that health camps hold classes aimed at developing disease management skills: a diabetologist nurse develops health competence by advising and demonstrating how to count carbs in food and what dishes to cook so that children with diabetes would eat healthy. Methods that develop creativity are also carried out during classes for smaller children (by drawing or colouring, children receive information through play). Strenuous activities are also carried out in health camps: games, educational programs, trips, during which children can also develop social skills. Therefore, in health camps children with diabetes mellitus acquire health competence knowledge and skills: disease management (learn how to count carbs in food, monitor blood sugar levels), healthy lifestyle

(children are encouraged to eat healthy and be physically active, i.e. in outdoor games). Children form a value attitude towards health, and that they themselves are responsible for it. Moreover, having sufficient information and skills, knowing how to properly manage the disease, children contribute to improving their health and controlling the disease. There are certain procedures carried out in health camps that help the child to maintain/restore one's state of health.

The analysis of the research results highlighted **activities and means used for the development of health competence, which are interesting and attractive to children with diabetes**. Various strenuous activities and mobile devices that are exciting to children and stimulate their interest, are used for the development of health competence in the environments of medical institutions, summer camps and health camps, which means that children get actively involved and develop health competence (Fig. 2).



*Figure 2 Classes and activities for the development of health competence in children with diabetes*

The research also showed that children with diabetes mellitus would like to have information and skills on diabetes delivered through a wider range of educational activities and mobile tools. Having analysed the responses of research participants, it is possible to divide educational activities/classes into two groups: **game-like activities and strenuous activities**.

Some of the *focus* group discussion participants emphasized that they would be interested in participating in such activities, in which health competence would be developed through a game. The following is especially true for smaller children:

*“Well, I think we need more games, I mean not just games, to play something, for example, like competitions or something, but presentation of information through the form of a game, I think it would be more interesting and maybe a bit different.” (A)*

*“Well yeah, especially, for example, for smaller children, who come, because, for example, those who start going to school, it’s more difficult for them. Well, not all, for example, parents can always go to school and monitor what they eat, so it’s not that interesting to them and so they don’t really learn how to count carbs, so I think, those who are older, they can sit through and listen and write down everything, so the smaller ones need something different or games, or other activities.” (C)*

The research found that it is important to rouse the curiosity of smaller children, to include educational methods in the form of games, with the help of which the knowledge, skills and value attitudes of health competence would be conveyed. Hence, it is important to select age-appropriate activities for smaller children when imparting knowledge about nutrition, foods, and especially how to count carbs in foods. The author emphasizes that education of a child requires to excite and involve one into the educational process, and when developing healthy lifestyle skills it is recommended to use methods of critical thinking, because the following methods help the child realize that healthy lifestyle skills contribute to health preservation (Gudžinskienė, 2000, 2013).

The other part of the *focus* group discussion participants mentioned that if **health competence was developed through strenuous educational activities** (puzzles, quizzes, brainstorming), they would participate more actively:

*“For example, like a quiz and questions about diabetes, then it would be interesting, it could be presented in a more interesting way, and I think there would definitely be more of those who would want to attend such classes.” (A)*

*“I think, I would agree with the quizzes too, and in general I really like that kind of games. It would be both fun and, I think, useful, I really think it would be cool.” (D)*

*“I kind of think, I’d like to solve a crossword related to some topic of diabetes, or, for example, swipe games, well, I mean, various puzzles are also interesting.” (L)*

The research revealed that children are interested if health competence knowledge, skills and value attitudes are developed through strenuous activities: puzzles, quizzes and brainstorming.

Having summarized the responses of the *focus* group discussion participants, it can be seen that the development of health competence requires the use of various classes and game-like activities that encourage children to get actively involved and learn (Gudžinskienė, 2000, 2013; Ivaškiene & Malinauskienė, 2021). The classes and activities used have a significant impact not only on the process of the development of health competence and the interest of children with diabetes mellitus, but also the assimilation of information and the development of practical skills and value attitudes. With the help of strenuous activities and game-like methods, it is possible to achieve a better control of diabetes, because by more actively participating in the development of health competence, children acquire

new knowledge and skills, and supplement the knowledge and skills they already have.

Disease-related health competence is important for good disease control and health preservation, thus it is important to analyse the need for health competence acquisition in children with diabetes.

## Conclusions

The research revealed that various educational methods and activities aimed at developing health competence are applied to children with type 1 diabetes mellitus in non-formal educational environments (medical institutions, summer camps and health camps). The following activities and classes are used in the environment of medical institutions: classes, conversations, filling in questionnaires, surveys about diabetes, and their discussions, as well as games. Activities used in summer camps are as follows: walks, cycling, games intended to develop physical activity skills and form the value attitude that sports and active physical activities improve the state of health. In the educational environment of health camps, the following educational methods and activities are used for the development of health competence in children with type 1 diabetes mellitus: lessons, games, educational activities, trips and creative activities.

The research showed that children with type 1 diabetes mellitus for the development of health competence in non-formal educational environments would like to have more game-like activities – age group games and active educational activities – puzzles, quizzes, brainstorming, which would help to be active and develop.

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# DEVELOPMENT OF HEALTH COMPETENCE OF CHILDREN WITH DIABETES MELLITUS IN THE SUMMER CAMP ENVIRONMENT

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**Abstract.** *Diabetes mellitus is becoming a leading disease in paediatric endocrinology, which causes health problems and complications that can shorten life expectancy. The object of the research is the development of health competence of children with diabetes mellitus in the summer camp environment. Research aim is to reveal the development of health competence of children with diabetes mellitus in the summer camp environment. Tasks: 1) to identify the development of health competence in the environment of summer camps; 2) to reveal health topics being discussed by children in summer camps; 3) to reveal pedagogical interactions between the educator and the students in the environment of summer camps. Research methods: theoretical: analysis, generalisation and systematisation of scientific literature; empirical: document analysis. The research found that not only does the environment of summer camps contribute to the development of health competence of children with diabetes mellitus but it also encourages them to fully get used to living with the disease and creates a favourable educational environment that encourages communication. The research revealed that in the summer camp environment children discuss the following topics: blood sugar control, causes of diabetes mellitus and independence in managing the disease. The summer camp environment is friendly, active as well as engaging and tolerant of learner interaction.*

**Keywords:** *diabetes mellitus, education, health competence, summer camp.*

## Introduction

Diabetes mellitus is a disease, when the body's processes that maintain a normal concentration of glucose in the blood are disrupted. In people with diabetes, the level of blood glucose increases, the entire metabolism gets affected (Devi, Bai & Nagarajan, 2020). In Lithuania, cases of type I diabetes in children have been registered since 1983. More than 995 children and young people (up to 19 years old) were registered in 2019. On average, more than 80 children contract diabetes in the country per year (Institute of Hygiene, 2020). When a child is diagnosed with diabetes mellitus, children and parents must immediately start learning, as they need to acquire health competence to be able to control the disease and cope with it (Ergun-Longmire et al., 2021). Children and parents, who

aim at controlling the disease, need information, skills and values that can be acquired in various educational environments. One of the environments for the development of health competence is the summer camp environment, where children can have fun in the company of friends as well as acquire the necessary health competence knowledge, skills and values (Coats, Hill, Ramsing, Reifschneider & Haegele, 2021). The following article aims to reveal the experiences of children with diabetes in the summer camp environment by answering the problematic question: How does the summer camp environment contribute to the development of health competence? What are the pedagogical interactions between the educator and the learners?

**Research object** is the development of health competence of children with diabetes mellitus in the environment of summer camps.

**Research aim** is to reveal the development of health competence of children with diabetes mellitus in the summer camp environment.

**Tasks:**

1. To identify the development of children's health competence in the environment of summer camps.
2. To reveal health topics discussed by children at the summer camp.
3. To reveal the pedagogical interactions between the educator and the learners in the environment of summer camps.

### **Research methodology**

Qualitative research type was chosen for the study. According to Žydžiūnaitė and Sabaliauskas (2017), the purpose of a qualitative study is to disclose experiences of children with diabetes, related to the possibilities of developing health competence in summer camps, based on the experiences of children with type I diabetes mellitus and the researcher. Observation in the summer camp environment was chosen primarily because in such an environment, children with diabetes mellitus not only acquire knowledge, skills and values related to health competence, but can also become stronger, find friends, develop their individual personalities and overcome difficulties. The second reason is related to the fact that both children and their parents participate in summer camps. Thirdly, there are role models in summer camps (adults with diabetes) who develop health competence through their individual experiences. **Observation was carried out according to the following criteria:** 1) interaction between the educator and the learners; 2) topics related to health competence; 3) environment for the development of health competence and education (favourable/unfavourable and how favourability is created).

**The sample of research.** A criteria-based sample was used in the study. The respondents were chosen according to the following criteria: 1) children with diabetes mellitus; 2) children who suffer from diabetes from the age of 11 to the

age of 16; 3) children who found out about the disease at least one year ago. The observation method was carried out in the summer of 2021 at a summer camp for children with diabetes mellitus and their parents. A total of 10 persons (5 parents and 5 children) were observed during the camp time. However, the following article only provides insights from observing children with diabetes. The duration of observation was one week, while children were participating in discussions. Not only did the researcher record the intended aspects during the observation, but also kept notes (memos) throughout the entire study. The notes (memos) contained carefully recorded insights, ideas and comments of the researcher about the obtained data, their analysis, thoughts about the obtained codes and connections between them (Glaser & Strauss, 2012). The notes (memos) also contained one or another insight that became clear to the researcher during the observation. Discussions were led by volunteer mentors (Rūta and Domas, names were changed), adults, who had diabetes since childhood. The age of research participants ranged from 11 to 16 years. The research was attended by 2 girls and 3 boys.

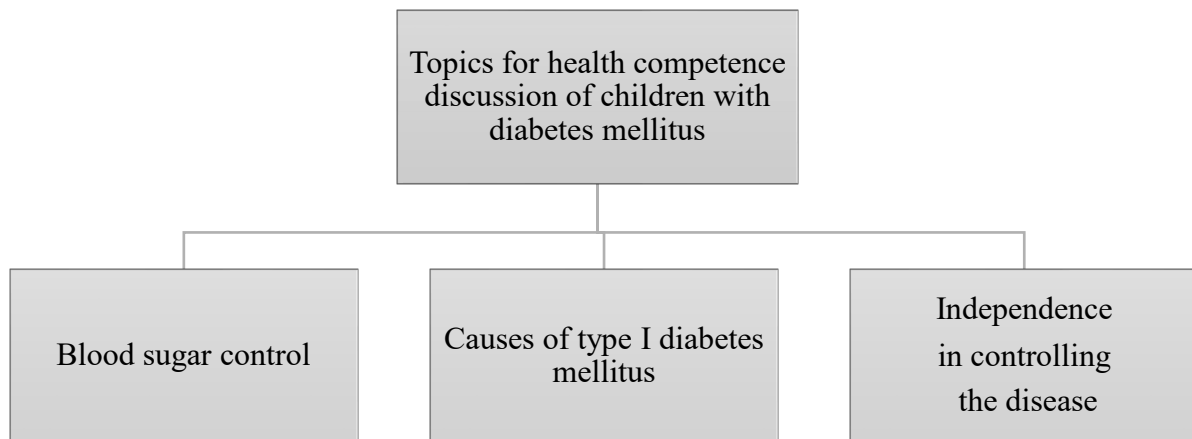
**Ethics of the research.** A parental consent of all research participants was obtained, allowing their children to participate in the research. During the research, the following essential principles of research ethics were complied with (Žydžiūnaitė et al., 2017): **a right not to be vulnerable. a right not to be abused, usefulness of the research** – the research participants wilfully agreed to participate in the research because their participation in a specific research makes a positive impact on the development of society and knowledge, as well as the research of new opportunities in Lithuania; **respect for personal dignity**; every research participant had **a right to make a personal decision whether to participate in the research or not**; **justice** – the participants had an opportunity to ask about the research and receive comprehensive information; the research participants were treated in a respectful and helpful manner; **confidentiality** – The participants of the study participated voluntarily. They were briefed on the purpose and the use of the study, the method of study data collection and the procedure of the study, anonymity and confidentiality were ensured; In order to maintain confidentiality, the names of respondents were encoded by other names – Tomas, Lukas, Tadas, Saulė and Laima.

### **The development of health competence in children with diabetes in the summer camp environment: observational analysis of discussion**

Summer camps are organised by representatives of diabetes organisations and health team, which consists of a diabetes educator and a diabetic nurse. Educational environments of summer camps are formed not only by representatives of the diabetes association, but also by trained volunteers who

create the ambience, ensure that the environment is safe and favourable for children, organise various activities and classes.

The *observational analysis of discussions* of the analysed discussion topics of children with diabetes mellitus, revealed three topics: blood sugar control, causes of type I diabetes mellitus, and independence in controlling the disease (Fig. 1).



*Figure 1* Topics for health competence discussion of children with diabetes mellitus

The analysis of the observation data and the researcher's notes (memos) taken during the research, as well as one's insights, ideas and comments about the obtained data recorded in them, revealed that the most relevant topic for children, which they willingly discussed was **blood sugar control**. The researcher indicates in one's notes: *"Tomas was the first to speak: the young man seemed in a good mood and wanted to ask a question. He was interested to know why it is sometimes difficult to control blood sugar. Volunteer mentor Rūta was the first to answer this question. She said that there are different stages in adolescence when girls and boys mature, which also affects the control of sugar levels."* Later, volunteer mentor Domas joined the discussion, he supplemented the answer of the volunteer mentor Rūta by explaining that various emotions (anxiety, stress, fear) also affect the blood sugar level; thus, these factors are also important, and not the selection of medication doses only. As the researcher observed everything without being directly involved, it was obvious that the *open and simple explanations* of Rūta and Domas **were acceptable** to Tomas. Having received the answer, he was satisfied and nodded his head, confirming that it was now clear to him and that he understood that it is necessary to monitor the various changes in the body. Therefore, this example revealed that *understanding and smooth communication is possible when the child and the volunteer mentor communicate with each other in a simple and friendly manner*.

Another topic of interest to children that emerged during the discussion is the **desire to be independent in controlling the disease**. Laima, one of the

participants of the discussion, who seemed confident and felt comfortable in this meeting, wanted to know: *“How should she tell her parents that she wants to control the disease completely by herself?”* (Because she already does a lot on her own, but her parents still want to help her). The researcher indicates in her notes: *“Rūta and Domas smile and nod in agreement.”* Later, volunteer mentors explained that they too had difficulties in sharing responsibilities with their parents. Volunteer mentor Domas began to share his experience, to tell how he managed to come to an agreement with his parents on this issue. According to Domas: *“First of all, everyone has to gather together and discuss this matter, tell the parents that you would like to control the disease yourself, but if there are any difficulties or questions, you will definitely tell your parents.”*

Therefore, ***an honest conversation with the parents, acting as a team, can help children gradually take full responsibility for their own disease.***

The research identified that another topic relevant for children with type I diabetes is **causes of diabetes mellitus**. A boy called Lukas asked: *“Why does type I diabetes occur?”* Volunteer mentor Rūta explained: *“The cause is not known; scientists have not yet explained why the immune system begins to destroy its own cells that are responsible for producing insulin...”* According to Rūta: *“It will take time for scientists to figure it out and find a way to overcome diabetes mellitus...”* After hearing the answer, Lukas seemed confused and restless.

The following was noticed by volunteer mentors Rūta and Domas. They asked if something was wrong. Lukas answered: *“I’m worried about my brother, because he might get diabetes too...”* In response to the boy’s anxiety, volunteer mentor Rūta talked about her family: *“I have 1 brother and 1 sister, who are completely healthy, they didn’t get diabetes like me...”* After this explanation, Lukas smiled and it seemed that volunteer mentor Rūta managed to calm Lukas down by sharing about herself.

Accordingly, ***an honest sharing of similar childhood experience by volunteer mentors is very important for children, because children understand that they are not alone, that the challenges of controlling and living with type I diabetes are solvable, and that they will receive support and assistance.***

The research revealed that **it is significant not to be afraid to speak about type I diabetes**, but rather to educate friends and the society. Volunteer mentor Domas asked children if their friends knew about the disease and how they reacted to it (whoever wanted to, answered). The researcher records in her notes: *“After everyone exchanged glances, Tadas began speaking (at first timidly and cautiously). He said that his friends know that he has diabetes and accept it well, they are also interested in how the pump and sensors work (technology is important for control). After Tadas finished speaking, volunteer mentors Domas and Rūta were happy and encouraged not to be afraid to talk about type I diabetes, society (friends, acquaintances) needs to be told about that, because this way*

*society becomes more sensitive and accepts the patient as an equal; after all, diabetes is only a disease, not the personality of a person.”*

**Thus, the research revealed that on the one hand, talking about type I diabetes with friends, society helps the child to accept one’s disease and learn to live with it. On the other hand, by talking about type I diabetes, we educate the society and this helps to “not be afraid” of the patient.**

The research found that **controlling the disease and how to properly control it** is an important and relevant topic for children with type I diabetes. A girl called Saulė asked: *“What does good control of the disease depend on?”* In her notes, the researcher indicates: *“Saulė was the youngest at this meeting (11 years old) and she had not yet controlled the disease on her own. Having asked a question, Saulė looked curiously at Rūta and Domas and waited for them to start explaining what good control means.”*

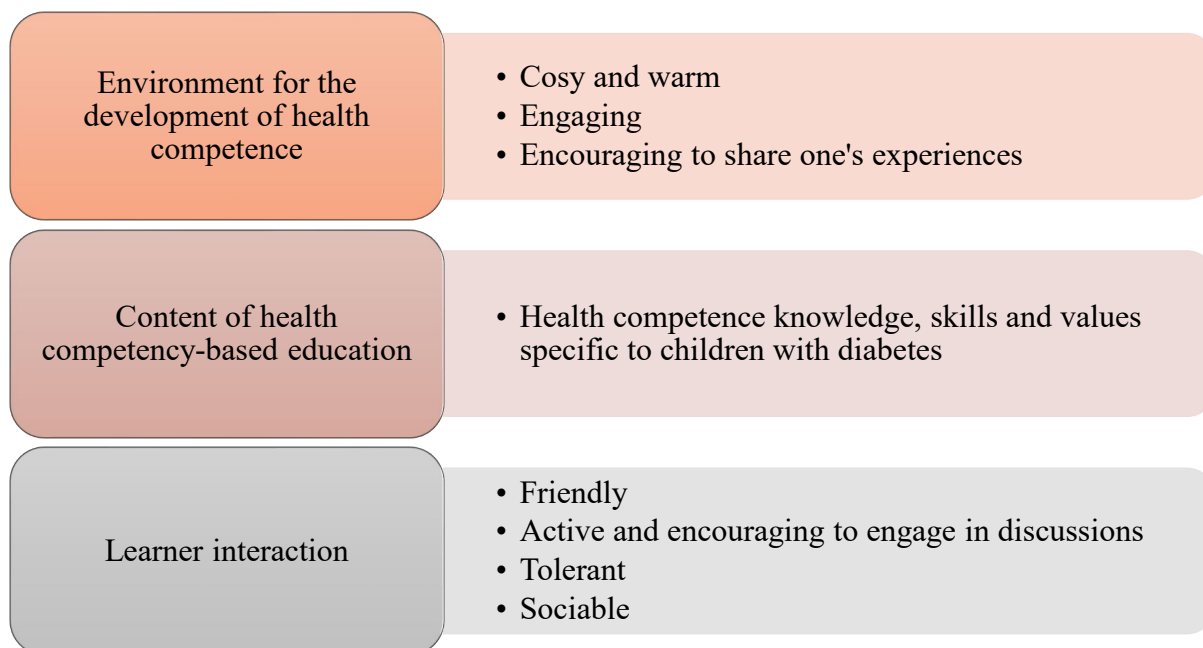
Volunteer mentor Rūta answered: *“Good control of the disease requires monitoring the blood sugar level and trying not to let it be too low or too high. Therefore, it is important not to forget to inject insulin when the sugar level is high, monitor changes in one’s body, eat healthy and maintain physical activity as well as, of course, combine rest time with other activities or studies.”*

Volunteer mentor Domas emphasized: *“It is important to take care of one’s health and preserve it, since diabetes damages the organism, and by avoiding unnecessary bad habits and following a daily routine, it is possible to achieve good control of the disease, which preserves health and helps to keep it as good as possible.”* **Research results show that sharing of experiences between volunteer mentors and children with type I diabetes helps children understand that good disease control helps to maintain optimal health and encourages children to be actively involved in controlling the disease.**

The research showed that the educational environment of summer camps for children with diabetes can help children to learn about their disease and control it. Research carried out by other scientists (Hill et al., 2019; Tumini et al., 2020; Hasan, Chowdhury, Haque & Patterson, 2020) also shows that there is a visible effect on children’s health after time spend at camps: acute complications, such as hypoglycaemia and hyperglycaemia, are less common; children can empower themselves to adhere to the principles of healthy living, which are very important in diabetes.

The authors’ (Hasan et al., 2020) research revealed that the educational environment of camps primarily helps children overcome fear, anxiety and stress; thus, in this regard the camp environment helps manage emotions and, in this way, contributes to controlling the disease. Secondly, during time spend at camps, children improve their nutrition skills and acquire health competence knowledge, skills and values that they lack (for example, about glycaemic control, choosing physical activities). Accordingly, what the environment is like, what kind of content is conveyed, and what the interaction of the learners is, are all important

for the development of health competence. All of the mentioned is shown in Figure 2.



*Figure 2 Educational elements of discussions between children with diabetes*

Children with diabetes took part in discussions with volunteer mentors Domas and Rūta, as well as adults who have diabetes since childhood, who shared personal experiences that can help children overcome difficulties and worries about the future. There was a warm ambience during the discussions. Participants were at ease, they made themselves comfortable: some were sitting, others were standing. Volunteer mentors were smiling and in a good mood, which added warmth and cosiness to the educational environment. Ivaškienė et al. (2021) emphasizes that a teacher must be a multifaceted personality: “One is a creative, critically thinking person, who is able to work in a constant change, effectively plan, organize and manage the educational process, and, most importantly, who understands children and is determined to help them in quality education” (Ivaškienė et al., 2021, p. 18). Accordingly, it can be assumed that the educator influences both the way the educational process takes place and the kind of interaction between the educator and the learners.

As the authors Gedvilienė and Zuzevičiūtė (2007) emphasize, not only do the educator and the learners exchange factual information, but also influence each other’s feelings, moods and general behaviour. Thus, the interaction between the educator and the learner is important not only for the transfer of information and its receipt, but also for learning to communicate and cooperate together, to develop social skills, to learn to tolerate each other, and to respect all participants involved in the educational interaction (Gedvilienė & Zuzevičiūtė 2007). To sum



up the ideas expressed by Gedvilienė and Zuzevičiūtė (2007), all participants of the educational process are inseparable from each other and the more favourable and pleasant the educational environment is created, the more participants can feel at ease and not be afraid to express their thoughts, which encourages the active participation of the learners and the educator in the learning process. As in these observed discussions involving children with diabetes, the educational environment (informal meeting, cosiness of the environment – a small hall with large windows, the communication and simplicity of educators) helped to establish a connection between the participants. The interaction between the educators and the learners was active and encouraged to engage in conversations.

When speaking about the interaction between the educator and the learners, Kurki, Jarvenova and Jarvela (2018) notes that both educator and learners are important in the educational process, who also influence other learners. Therefore, it can be summarized that the interaction between the educator and the learners is essential for both parties: the behaviour of learners in the educational process can determine not only the behaviour of others, but also the behaviour of the educator. The examination of the observed interactions revealed the learners' communication, social skills and tolerance for each other (children did not interrupt and allowed each other to speak and ask questions, listened to the answers, expressed their opinions or nodded in agreement, which gave courage to others to express their opinions or ask a question and not be afraid of being misunderstood). It is crucial that children trust the teacher and consider one a friend, but at the same time, an authority who teaches and imparts knowledge. Vabalas-Gudaitis claims that interaction between the teacher and the learners must be mutual, friendly and developing relationships. It is also emphasized that interaction between the teacher and the learners is as important as the interaction between parents and children (Kairaitis, 2012).

In terms of constructivist interaction between the educator and the learners, which was analysed by Gudžinskienė (2010), it is emphasized that the educator must interest the children by offering a compelling activity, topic, pastime when children can actively do something and explore as well as make their own interpretations, or, in other words, act freely, and the educator is that person who can encourage, answer the questions, help and support. Thus, it can be seen that from a constructivist point of view, the interaction between the educator and the learners is active and aims at cooperation and a common goal. Piaget (2002) highlights that children create knowledge through the interaction of their experiences and ideas; therefore, it can be assumed that in this respect interaction is related to experience (this can be various people encountered, including teachers, situations and circumstances). Based on research on the cognitive development of children, Piaget (2002) identified the processes of accommodation (adaptation of the mental representation of the external world to match new experiences) and assimilation (process, during which an individual or

individuals acquire the social and psychological characteristics of a group), which are the interaction of experiences and ideas. The two processes mentioned focus on how learning is carried out rather than what influences learning. Dewey (1938) brought attention to the fact that interaction between the educator and the learners is necessary and that it must be democratic, when children actively participate in the learning process, express their thoughts and engage in creative activities, but at the same time the educator is involved and encourages to generate thoughts and discoveries.

It should be noted that the children's meeting with volunteer mentors Domas and Rūta corresponded to the constructivist theory of education: all participants of the discussion were actively engaged in the conversation, the educational environment was encouraging to communicate and cooperate with each other. During conversations, all participants shared their experiences and at the same time developed health competence. It is worth mentioning that interaction between children with diabetes and volunteer mentors Domas and Rūta, who carried out the role of teachers in the discussion (they also have diabetes mellitus), was tolerant and friendly. Therefore, interaction between the educators and the learners as well as the educational environment are significant in the development of health competence, because the acquisition of necessary knowledge and development of important disease control skills and values require a health educator (who provides information) and an educational environment, which is formed and implemented by the health educator, while the assimilation of information depends on interaction.

## **Conclusions**

The research established that children with type I diabetes mellitus develop health competence in the environment of summer camps. In the summer camp environment, children not only develop health competence, but also learn to accept the disease, understand it, while experiential learning was also encouraged. Children learn through experience by interacting and collaborating with other children and sharing their background.

The research revealed that the following topics are relevant for children with type I diabetes: blood sugar control, causes of type I diabetes, and independence in controlling the disease.

It became clear during the empirical research that the pedagogical interaction between the educator and the learners is very important in creating a favourable educational environment and transferring knowledge of health competence, conducting a discussion with children. If the educator is able to motivate children, arouse their desire to learn, and establish warm relationships, then children are happy to participate in such discussions and develop health competence.

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## FITNESS LEVEL OF SECONDARY SCHOOL STUDENTS ENGAGED IN SPORTS

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**Abstract.** School physical education is effective means of providing children with the knowledge for lifelong physical activity. The research was aimed to examine the influence of different sports activities (badminton, basketball, football) on fitness level of boys aged 10-11. 72 boys aged 10-11 were engaged in the research. Evaluation of children's fitness level involved anthropometric parameters of body length (cm); body mass (kg); hand dynamometry (kg). Cardiovascular and respiratory systems were also assessed: heart rate (HR, bpm) – method of palpation; blood pressure – systolic (SBP, mm Hg) and diastolic (DBP, mm Hg) – method of Korotkoff sounds; vital capacity of lungs (VC, L) – spirometer measuring. The Ruffier index, life index, strength index, the Robinson index and the Quetelet index were considered as well. Summing the points of five parameters, fitness levels were defined as low, below average, average, above average, and high. Comparative analysis of ball games influence on children's fitness level revealed the highest growth rate among badminton players, though their initial and final parameters were the lowest ones. Research findings made it possible to conclude that extramural engagement in ball games throughout school year had beneficial effect on fitness levels of boys aged 10-11.

**Keywords:** ball games, evaluation, influence, physical activity.

### Introduction

Today moving seems to have become a serious problem and yet we are predisposed to motion and activity, we interact with our environment through movement. The school, as an educational place, should contribute to the lowering of this percentage, educating and promoting a healthy lifestyle, in which motor activity plays a fundamental role (Pesce, Crova, Cereatti, Casella, & Bellucci, 2009; Lorås, Haga, & Sigmundsson, 2020). Factors, such as social change and increasing urbanization processes in the early years of the 21st century, have caused a reduction in the amount of time that youth devote to leisure activities; sedentary behaviors are on the rise (World Health Organization, 2019). Physical education is a key setting for children to engage in health-enhancing physical

activity (Domville, Watson, Richardson, & Graves, 2019).

The school environment is a recommended setting for the promotion of physical activities among children and adolescents (Hollis et al., 2016). Physical education in school is the most effective and inclusive way of providing children with the skills, attitudes, values, knowledge, and understanding for lifelong participation in physical activities and sport (Hardman, Murphy, Routen, & Tones, 2014; Woynarowska, Mazur, & Oblacińska, 2015).

School-related physical activity interventions may reduce anxiety, increase resilience, improve well-being and increase positive mental health in children and adolescents. Considering the positive effects of physical activity on health in general, these findings may reinforce school-based initiatives to increase physical activity (Andermo et al., 2020). Games promote abstract knowledge, which in general situations these strategies can be used in different contexts (Pesce, Marchetti, Motta, & Bellucci, 2015; Tomporowski & Pesce, 2019). For children, both the functional (e.g. keep the activity running) and the social (e.g. practice with teammates) dimensions of game and practice seemed to be of equal importance, determining both the intensity and the meaning given to their participation (Dania & Harvey, 2020).

According to the researchers, the present school system of physical education is not able to provide the proper level of physical and intellectual capacity, which the current employment market will require from them and which will be necessary for them for further professional activity (Krutsevich, 2003; Galan et al., 2017; Andrieieva, Galan, Hakman, & Holovach, 2017; Nakonechnyi & Galan, 2017; Pasichnyk et al., 2018; Galan et al., 2019). So, after-school approaches offer a viable solution to the current challenge of physical inactivity among many adolescents (Roth, Brooks-Gunn, Murray, & Foster, 2003).

The research was aimed to examine the influence of different sports activities (badminton, basketball, football) on the fitness level of boys aged 10-11.

## **Material and methods**

The study involved 72 boys aged 10-11 years attending sports classes in basketball, football and badminton. The number of children in each group was the same and comprised 24 people. All groups had a 1.5-hour training three times a week. During the summer holidays, all children had a break from sports classes for 30 days in July. The research methods of the study: analysis and synthesis of literature sources; pedagogical observation; H. Apanasenko method of evaluating an individual fitness level of children; mathematical statistics.

Evaluation of the individual fitness level of children by the method of H. Apanasenko (2000) involves the definition of the following anthropometric parameters: body length (cm); body mass (kg); dynamometry of dominant hand (kg). Anthropometric monitoring was performed with standard tools according to

the generally accepted methods. Due to the methods, cardiovascular and respiratory systems were also assessed on the following parameters:

- Heart rate (HR, bpm) – method of palpation;
- Blood pressure – systolic (SBP, mm Hg) and diastolic (DBP, mm Hg) – method of Korotkoff sounds;
- Vital capacity of lungs (VC, L) – spirometer measuring.

The Ruffier test was also carried out:

heart rate of the pupils was measured for 15 seconds in a sitting position after 5-minute rest (HR<sub>1</sub>), for the first 15 seconds after performing 30 squats in 45 seconds (HR<sub>2</sub>), and for the last 15 seconds of the first minute recovery after the exercise (HR<sub>3</sub>).

The Ruffier index was calculated by this formula:

$$RI = (4 \times (HR_1 + HR_2 + HR_3) - 200): 10 \text{ (points)}$$

Additionally, the following parameters were considered:

Life index: LI = vital capacity of lungs/body mass (mL/kg)

Strength index: SI = hand dynamometry / body mass x 100 (%)

The Robinson index (double product):

$$DP = HR_{rest} \times SBP / 100 \text{ (relative units - r.u.)}$$

The Quetelet index (ratio of body mass to body length – points by the table):

$$QI = \text{body mass (g)} / \text{body length (cm)}$$

All the parameters were calculated in points. Summing the points of the five parameters and comparing the result with the table scale, the fitness levels were determined as low, below average, average, above average, and high (Table 1).

*Table 1 Express-evaluation of boys' fitness levels (Apanasenko, 2000)*

N	Parameters	Fitness levels				
		low	below average	average	above average	high
1	Life index, mL/kg	45	46-50	51-60	61-69	70
	(points)	0	1	2	3	4
2	Strength index, %	45	46-50	51-60	61-65	66
	(points)	0	1	2	3	4
3	Robinson index, relative units	101	100-91	90-81	80-75	74
	(points)	0	1	2	3	4
4	Quetelet index, points	-3	-2	-1	0	0
5	Ruffier index, relative units	14	13-11	10-6	5-4	3
	(points)	-2	-1	2	5	7
	Points total	2	3-5	6-10	11-12	13

## Results

The parameters of the pupils' fitness levels were defined at the beginning and at end of the study.

The initial research data analysis (Table 2) showed a higher index of the boys' body length among football players ( $142.4 \pm 0.7$ ) as compared to badminton ( $140.2 \pm 0.7$ ) and basketball ( $141.2 \pm 1.4$ ) players.

*Table 2 Initial parameters of physical development and functional state of boys aged 10-11 (M±m)*

Parameters of fitness level	Groups		
	Badminton players (n=24)	Football players (n=24)	Basketball players (n=24)
Body length (cm)	140.2±0.7	142.4±0.7	141.2±1.4
Body mass (kg)	35.9±0.6	36.1±0.8	37.7±1.2
HR <sub>rest</sub> (bpm)	84.2±1.4	82.5±1.9	82±1.5
VC (mL)	1808.3±25.4	1666.6±31	1687±91.9
Hand dynamometry (kg)	15±0.4	17±0.7	20.87±0.63
SBP (mm Hg)	95.6±0.9	94.7±0.8	95.2±0.92
DBP (mm Hg)	62±0.5	61.25±0.4	62.08±0.51

The body mass index of the pupils engaged in badminton and basketball was of medium homogeneity ( $10\% < V < 20\%$ ), while the football players were homogeneous ( $V < 10\%$ ). The average index was higher among the basketball players ( $37.7 \pm 1.2$ ).

The HR index showed medium homogeneity among the football players ( $10\% < V < 20\%$ ), whereas the basketball and badminton players were homogeneous ( $V < 10\%$ ). The average HR index was higher in the group of basketball players ( $84.2 \pm 1.4$ ).

VC was homogeneous among the badminton and football players ( $V < 10\%$ ), but the group of basketball players appeared to have medium homogeneity ( $10\% < V < 20\%$ ). The average index was higher among the badminton players ( $1808.3 \pm 25.4$ ).

Hand dynamometry indicated medium homogeneity in the three groups ( $10\% < V < 20\%$ ). The basketball players had the highest average index ( $20.87 \pm 0.63$ ), and the badminton players – the lowest ( $15 \pm 0.4$ ).

The BP index revealed homogeneity in all the groups ( $V < 10\%$ ). SBP of the badminton, football, and basketball players was within normal limits, ranging 90-100 bpm. DBP did not differ significantly, ranging 60-65 bpm.

However, the regular engagement in ball games resulted in substantial parameter improvement in the three groups of boys (Table 3).

**Table 3 Parameters of physical development and functional state of boys at the end of academic year ( $M \pm m$ )**

Parameters of fitness level	Groups		
	Badminton players (n=24)	Football players (n=24)	Basketball players (n=24)
Body length (cm)	142±1.03	143.2±1.3	145±0.7
Body mass (kg)	36.1±0.9	37.3±1.2	38.9±0.4
HR <sub>rest</sub> (bpm)	82.5±1.5	82.8±1.8	82.08±1.5
VC (mL)	1895±29.7	1916.7±39.1	1725±86.5
Hand dynamometry (kg)	17.3±0.4	17.9±0.59	21.9±0.98
SBP (mm Hg)	95.4±0.9	97.3±1.4	95.2±1.06
DBP (mm Hg)	62.08±0.7	62.3±1.2	61.9±0.78

Some changes occurred in the physical development and functional state of adolescents during the year. In particular, statistically significant changes ( $p < 0.05$ ) in the indices of VC and hand dynamometry were found in the group of badminton players. A minor increase was observed in the indices of body length and body mass, though they are statistically insignificant ( $p > 0.05$ ) and correspond to the age-related changes in the boy's organism. No considerable changes occurred in HR and BP indices of the cardiovascular system. All parameters of the group became homogeneous ( $V < 10\%$ ).

The boys of group 2, engaged in football, had statistically significant changes ( $p < 0.05$ ) in the index of VC, with an increase by 15%. Other changes were age-related. All parameters of the group became homogeneous ( $V < 10\%$ ).

The pupils of group 3, engaged in basketball, appeared to have statistically significant changes ( $p < 0.05$ ) in the indices of body length, VC, and hand dynamometry. No considerable changes, except age-related, occurred in other parameters of physical development and functional state of the body systems.

Thus, the comparative analysis of the initial and final parameters of physical development and functional state of the boys revealed statistically significant changes ( $p < 0.05$ ) in the VC indices of the three groups. In addition, badminton players were found to have statistically significant changes in the indices of dynamometry, and basketball players – in the indices of body length and dynamometry.

Initial results of the Ruffier test in group 1, engaged in badminton, indicated a low level among 58% of the boys, and below average – 42%. The average in the Ruffier index in this group was  $11,94 \pm 0.43$ . Group 2, engaged in football, displayed low level among 12% of the players, below average – 62%, average – 22%, and above average – 4%. The average in the Ruffier index in this group was  $11,03 \pm 0.48$ . Group 3, engaged in basketball, showed a low level among 8% of the pupils, below average – 62%, and average – 30%. The average in the Ruffier index in this group was  $11,26 \pm 0.46$ .

At the end of the year, the Ruffier test results were improved significantly



( $p < 0.05$ ) in all the groups and were better in all three groups. In the first group (badminton players), the average value of the Ruffier index became  $9.97 \pm 0.44$ ; in the second group (football players)  $9.66 \pm 0.45$ ; in the third group (basketball players)  $9.89 \pm 0.49$ . Hence, low level was presented by only 4% of the badminton players. Below average level was demonstrated by 33% of the badminton players, 29% of the football players, and 25% of the basketball players. The average level was shown by 46% of the badminton players, 50% of the football players, and 63% of the basketball players. Above average level was displayed by 17% of the badminton players, 17% of the football players, and 12% of the basketball players. The dynamics of the Ruffier index indicate an improvement in the body's adaptation mechanisms of boys aged 10 - 11 to intense physical load.

At the beginning of the academic year, the estimated parameters of the boys in all groups (life index, strength index, the Robinson index, and the Quetelet index) were within the low, below average and average levels. Engagement in sports classes enhanced the boys' parameters: decreased ratio of low and below average levels, increased number of above average level, and emergence of pupils with high level of development. The most substantial changes were found in life index, grounded on statistically significant changes ( $p < 0.05$ ) in the VC indices of the boys in all groups.

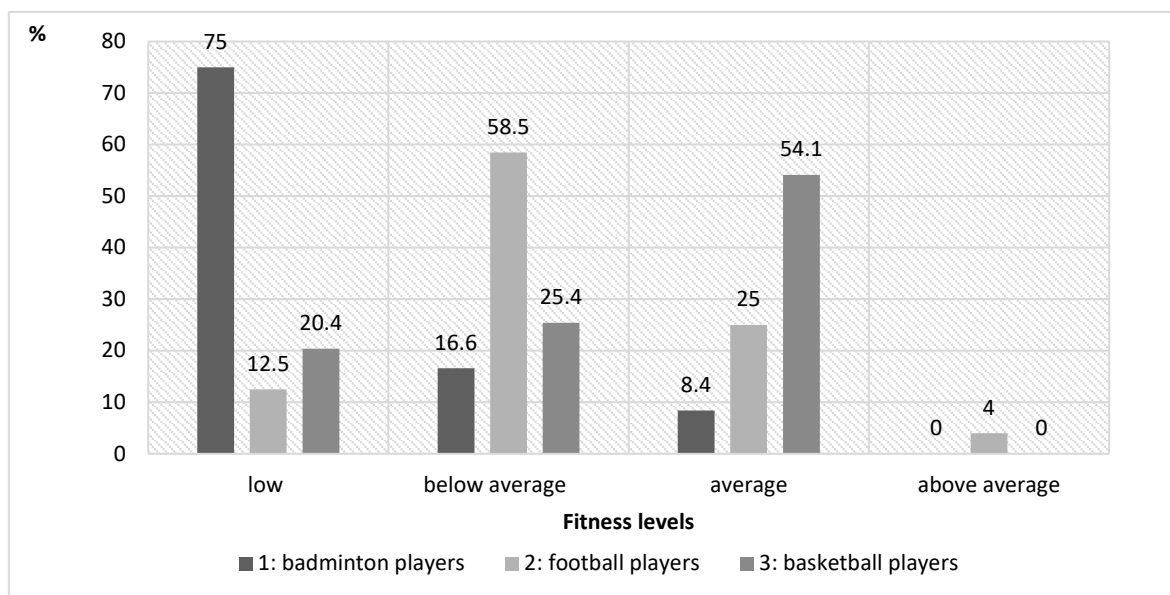


Figure 1 *Fitness levels of boys in different groups at the beginning of academic year*

The results revealed that fitness levels of most school boys aged 10-11 engaged in sports classes were low and below average at the beginning of academic year (Fig. 1). So, the boys in the first group (badminton players) had an average fitness level 2.6 points, in the second group (football players) 4.6 points and in the third group (basketball players) 5.1 points, which corresponded to the below average level. Only 4% of the boys engaged in football had above average

fitness level. No boys in the three groups were found to have high fitness level.

Due to the improvement of parameters in physical development and functional state, the pupils' fitness level increased as well. Fitness levels of the boys in all three groups improved significantly during the study (Fig. 2). The boys in the first group (badminton players) had an average fitness level 6.7 points, in the second group (football players) 7.8 points and in the third group (basketball players) 7.2 points, which corresponded to the average level. No pupils demonstrated low fitness level. Below average level was displayed by 33% of the badminton players, 29% of the football players, and 37% of the basketball players. The ratio of average level increased in each group: 54% of the badminton players, 29% of the football players, and 53% of the basketball players. Above average level was mostly presented by the football players – 21%, also the basketball players – 8%, and the badminton players – 13%. At the end of the experiment high fitness level was revealed among the football players – 13% and the basketball players – 2%.

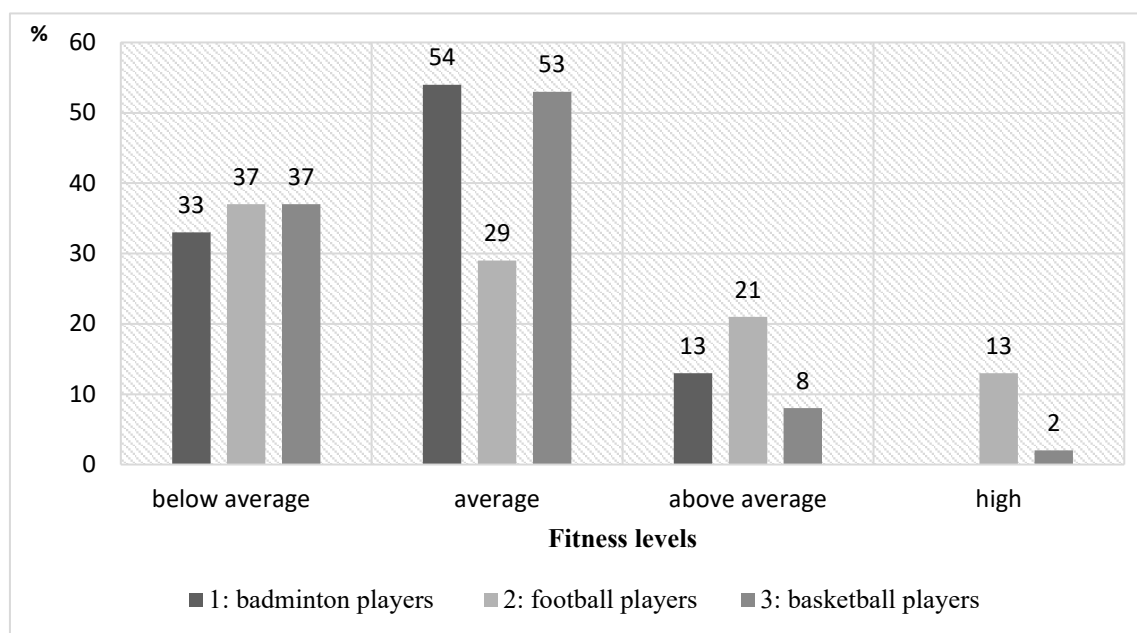


Figure 2 Final fitness levels of the boys

Fitness levels in all three groups of the boys were enhanced as a result of the improved parameters such as the Ruffier index and the Robinson index, thus indicating the beneficial effect of extramural sports classes on the cardiovascular system. The parameters of strength index (hand dynamometry) and life index (VC) increased as well.

The comparative analysis of the effects of different extramural sports classes on the state of the pupils' health showed the highest fitness level among the football and basketball players, and the lowest parameters were found among the badminton players.

In the course of our research, the following growth rate of fitness levels was observed in all three groups of boys (Fig. 3). The badminton players demonstrated a 200% decrease of low level and the increase of other fitness levels: below average – 66%, average – 146%, above average – 200%.

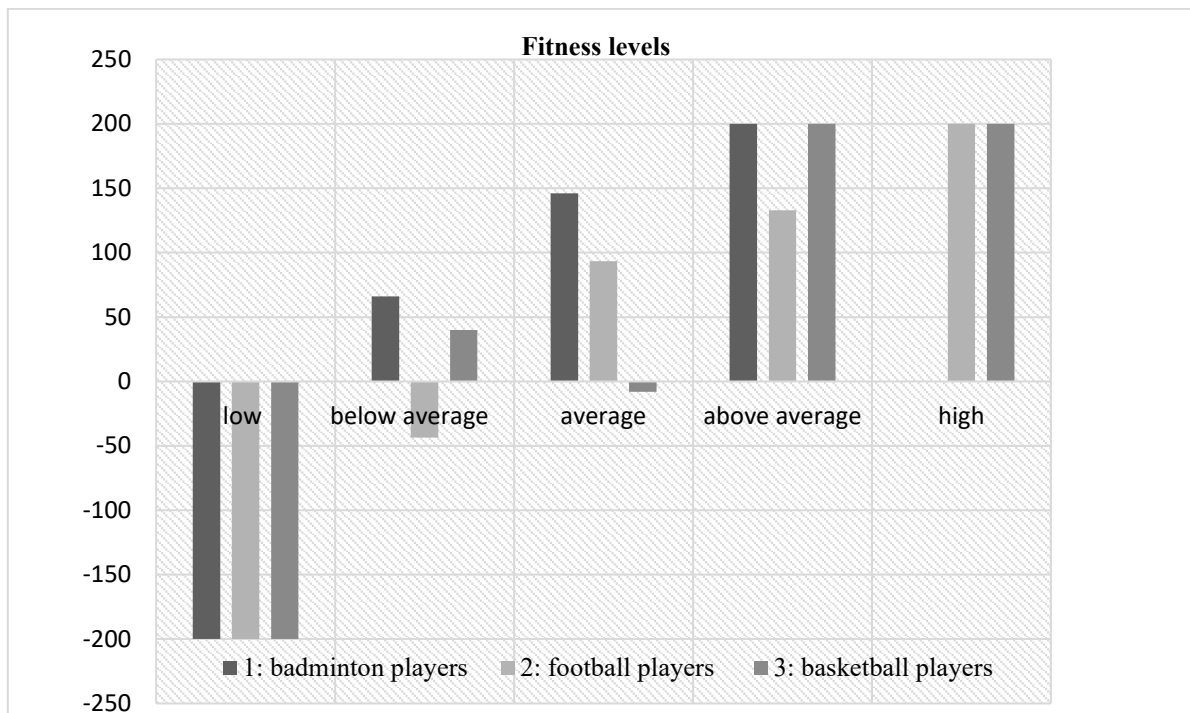


Figure 3 The growth rate of boys' fitness levels due to their sports classes

The boys engaged in football had a significant reduction of low fitness level by 200%, and an equal 200% increase of high level as well. Below average level of the football players' fitness decreased by 43.5%, with the related growth of other levels: average – 93.3% and above average – 133%.

The group of basketball players displayed such growth rate of fitness levels: low – 200% decrease, average – 8% increase, above average, and high – 200% increase.

Thus, the sports classes in badminton, football, and basketball appeared to have a beneficial effect on the health of boys aged 10-11. This was confirmed by a significant increase in the fitness level of badminton players (61%), football players (16%) and basketball players (27%). The impact peculiarities of different ball games on children's fitness level revealed the highest growth rate in the group of badminton players, even though their initial and final results were the lowest.

## **Discussion**

The results of systematic review indicate that school-related interventions aiming to promote physical activity can reduce anxiety, increase resilience, increase well-being, and improve positive mental health of children and young people. Considering the positive effects of physical activity on health in general, these findings may reinforce school-based initiatives to increase physical activity. (Andermo et al., 2020).

Middle-aged childhood, from 6 to 12 years old, is often referred to as the “forgotten years” of development because most research focuses on early childhood development or adolescent growth. However, middle childhood is rich in potential for cognitive, social, emotional, and physical progress. During this period, the brain is actively subjected to synaptic cutting and, as such, becomes more and more refined, a process that largely depends on the environment of a child. This discovery opens the door to optimizing the experiences a child has to provide a solid foundation for maturity (Mah & Ford-Jones, 2012).

We agree with this point of view, as our research testifies to the importance of sports for children of middle school age when the rapid growth and development of the body are actually observed. The researches have shown a favorable influence of regular engagement in ball games on fitness level improvement for boys aged 10-11 (Nakonechnyi et al., 2023; Luvei et al., 2022; Khanikiants et al., 2021; Andrieieva et al., 2020).

Athletes, competing in different sports and sports disciplines, differ in their physical and physiological characteristics (Stojanovic et al., 2016).

Since each sport has its own specific demands, every athlete should have specific anthropometrical characteristics and body composition related to the sports disciplines involved. (De Oliveira-Junior et al., 2016).

We share and confirm the scholars’ opinions with the results of our research. It showed the contribution of regular engagement in badminton and basketball to the active development of muscle strength in the boys’ upper extremities.

Anthropometrical characteristics and body composition of athletes have been the subject of many investigations as many researchers have hypothesized that athletes in training might be expected to exhibit structural and functional characteristics that are specifically favorable to the sports they play (Singh, Singh & Singh, 2010). The need to investigate data obtained from the investigation of anthropometrical characteristics and body composition of soccer and volleyball players is as important as adequate body composition and body mass which, among other factors, contribute to optimal exercise routines and performance (Massuça & Fragoso, 2011).

We support this thesis, as our research has shown a higher increase in the boys’ body length among basketball players as compared to the boys engaged in football and badminton. Changes in the dynamometry parameters of the boys are

more significant among badminton and basketball players. These differences are due to the impact specifics of different sports.

## Conclusions

Pupils' engagement in sports classes appeared to greatly advance fitness levels in the three groups of boys. In view of primarily low and below average fitness levels of pupils at the initial stage of research, the parameters were much higher in the final part of the study, with prevalent average and above average levels of fitness. In addition, no boys with low fitness level were found in any of the groups, while the football and basketball groups displayed to have boys with a high fitness level.

The comparative analysis of ball games' influence on children's fitness level revealed the highest growth rate in the group of badminton players, though their initial and final parameters were the lowest.

On the grounds of the research findings, it is possible to conclude that extramural engagement in ball games throughout the school year had a beneficial effect on the fitness levels of boys aged 10-11.

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# SARKOMU SASTOPAMĪBA LATVIJĀ ATKARĪBĀ NO DZIMUMA UN VECUMA 10 GADU PERIODĀ

## *The Prevalence of Sarcoma in Latvia depending on Gender and Age over a 10-Year Period*

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**Abstract.** Sarcomas are a heterogeneous group of malignant neoplasms that arise from the mesenchymal tissues, including bone, cartilage, fat, muscle, blood vessels, nerves, and deep skin tissues. The World Health Organization (WHO) Classification of Tumors of Soft Tissue and Bone encompasses over 80 distinct histologic subtypes of sarcomas, each with unique morphologic and molecular features. The high degree of histologic diversity among sarcomas underlies their capacity to arise in virtually any anatomic site. Sarcomas represent a relatively uncommon form of cancer, accounting for less than 1% of all new cancer diagnoses in adults and approximately 15% in children. The global incidence of sarcomas is estimated to be approximately 8 cases per million per year for bone sarcomas and 30 cases per million per year for soft tissue sarcomas. The objectives of the study to provide a comprehensive overview of the gender and age differences in the epidemiology of sarcomas in Latvia across 10 years. This retrospective population-based study draws on epidemiological data regarding cases of bone sarcomas and soft tissue sarcomas collected by the pathological registry of the hospital of Traumatology and Orthopaedics. From 2012 to 2022, 146 new cases of sarcoma were diagnosed in Latvia. Of these, 74 (50.7%) were men and 72 (49.3%) were women. The average annual number of new cases was 6.73 for men and 6.55 for women. The age-standardized incidence rate per 100,000 people per year was 0.8 for men and 0.5 for women. The youngest patient was 14 years old and the oldest was 87 years old. The most common age group for the sarcomas was between 61-70 years old (19.2%). The study found that the incidence of sarcomas in Latvia was higher in males than in females, and that the incidence was highest in 2020 and lowest in 2016.

**Key Words:** age, bone, epidemiology, gender, sarcomas, soft tissue.



## **Ievads** ***Introduction***

Sarkomas ir heterogēnas solidās mezenhīmas audu izcelsmes neoplazmas. Šīs neoplazmas ir klasificējamās divās primārajās kategorijās: mīksto audu sarkomas un primārās kaulu sarkomas (Constantinou, 2024). Sarkomu morfoloģiskā un molekulārā heterogenitāte ir izteikta, nodrošinot plašu klīnisko un patoloģisko subtipu spektru. Šī heterogenitāte ir būtiska to terapeitiskās stratēģijas izstrādē un prognozēšanā. Mezenhimālie audi, no kuriem sarkomas izriet, ir izplatīti visā cilvēka organismā, tādēļ šie ļaundabīgie audzēji var manifestēties jebkurā ķermeņa daļā. Visbiežāk tie atklājas ekstremitātēs, stumbrā un iegurnī, kā arī galvas un kakla reģionos. Sarkomu izpētes jomā tiek pielietotas mūsdienīgas molekulārās un ģenētiskās analīzes metodes, lai labāk saprastu to patoģenēzi un attīstīt efektīvākas terapijas pieejas. Tās ir svarīgas gan klīniskās diagnostikas, gan arī onkoloģiskās ārstēšanas kontekstā, ņemot vērā audzēju agresivitāti un tendenci izplatīties (Trent, Rosenberg, Pollock, & DeLaney, 2020). Kaulu sarkomu ārstēšana parasti ir kompleksa, tā sastāv no vairākiem etapiem: precīza radioloģiskā diagnostika, biopsija, iespējama ķīmijterapija (atkarībā no audzēja tipa), ķirurģiska ārstēšana, kas ir audzēja rezekcija un aizvietošana ar endoprotēzēm vai citu kaulu (National Comprehensive Cancer Network, 2023).

Eiropas Savienībā sarkomas sastāda 1.5 - 3 gadījumi uz 100000, abi sarkomas veidi mēreni biežāk sastopami vīriešiem nekā sievietēm. Mīksto audu sarkoma sastāda ap 84% no visiem sarkomām ES, savukārt kaulaudu sarkoma sastāda tikai 14% un veido vienu no galvenajām reto vēža veidu grupām Eiropā (Stiller, Trama, Serraino, Rossi, Navarro&Casali, 2013).

Katru gadu Latvijā ar onkoloģiskām slimībām saslimst ap 12000 cilvēku un mazāk nekā 1% no tiem – sarkomas (Global Cancer Observatory, 2022). Ņemot vērā, ka Latvijā sarkomas veido mazāk nekā vienu procentu no visiem vēža gadījumiem, tas ir unikāls un klīniski nozīmīgs izaicinājums medicīnas sabiedrībai. Šo reto gadījumu izpēte palīdz ne tikai izprast vietējo epidemioloģiju, bet arī papildina globālo zināšanu bāzi par sarkomām, kas var palīdzēt izstrādāt labākas skrīninga stratēģijas, optimizēt ārstēšanas pieejas un uzlabot pacientu ar šo sarežģīto diagnozi kopējo dzīvildzi (O'Sullivan, Roy, J. O'Sullivan, Vernon, & Eary, 2005).

Dati par sarkomas epidemioloģiju ir ierobežoti, jo Latvijā neeksistē vēža reģistrs. Tas rada grūtības apkopot pilnīgu un sistemātisku informāciju par saslimstību ar sarkomām un to izplatību, kas ir svarīgi efektīvai veselības aprūpes resursu plānošanai un mērķtiecīgu medicīnisko un profilaktisko pasākumu izstrādei. Nepieciešams aktualizēt sarkomas problēmu, jo tām raksturīga progresējoša, parasti straujāka audzēja augšana nekā klasiskajam vēzim, īpaši bērniem, jo bērnībā saistaudi un muskuļaudi aug aktīvāk, kā arī biežāki recidīvi.

Šī pētījuma mērķis ir sniegt pārskatu par dzimuma un vecuma atšķirībām sarkomu epidemioloģijā Latvijā 10 gadu laikā.

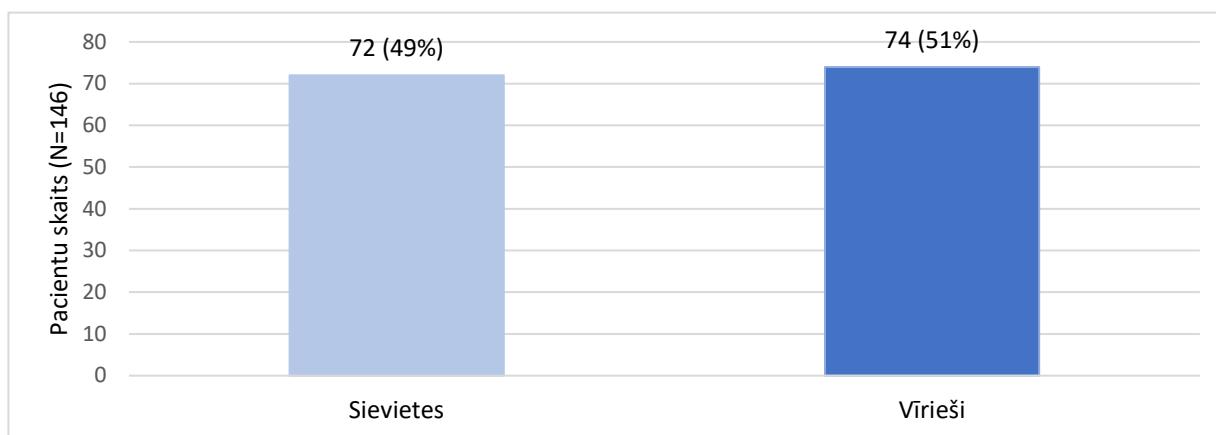
## Pētījuma metodoloģija

### *Methodology*

Šis retrospektīvais pētījums balstās uz epidemioloģiskiem datiem par kaulu un mīksto audu sarkomu gadījumiem, ko apkopojis Traumatoloģijas un ortopēdijas slimnīcas patoloģiskais reģistrs. Pētījums veikts Traumatoloģijas un ortopēdijas slimnīcā, izmantojot slimnīcas medicīniskās dokumentācijas arhīvu no 2012. līdz 2022. gadam. Slimnīcas medicīniskās dokumentācijas arhīvā tika identificēti pacienti ar kaulu un mīksto audu sarkomām. Kopā pētījumā iekļauti 146 pacienti, no kuriem N = 72 sievietes un N = 74 vīrieši, visi iegūtie dati tika izanalizēti.

## Rezultāti

### *Results*



1. attēls. Pacientu sadalījums pēc dzimuma

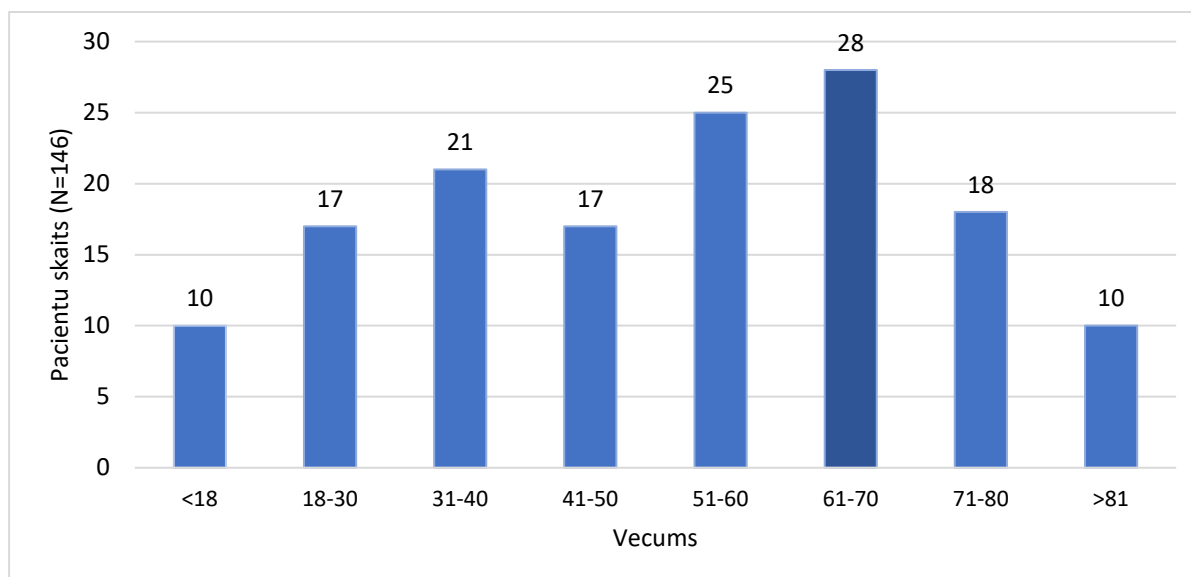
*Figure 1 Distribution of patients by gender*

1. attēlā parādīts sarkomas pacientu sadalījums pēc dzimuma, kopā 146 gadījumi. Tajā redzams, ka saslimstība ir nedaudz augstāka vīriešiem (74 pacienti, 51 %) salīdzinājumā ar sievietēm (72 pacienti, 49 %). Šis dzimumu sadalījums ir gandrīz vienmērīgs, ar nelielu vīriešu dzimuma pacientu pārsvaru. Šādi dati varētu liecināt, ka dzimums būtiski neietekmē sarkomu sastopamību šajā populācijā, taču, lai pilnībā izprastu šo secinājumu ietekmi, būtu nepieciešama papildu analīze.

1.tabula. **Pētījumā iekļautas vecuma grupas**  
 Figure 1 **Age groups of the patients included in the study**

Vecums		Biežums	Procenti	Valīdie procenti	Uzkrātie procenti
Valīdie	<18	10	6,8	6,8	6,8
	18-30	17	11,6	11,6	18,5
	31-40	21	14,4	14,4	32,9
	41-50	17	11,6	11,6	44,5
	51-60	25	17,1	17,1	61,6
	61-70	28	19,2	19,2	80,8
	71-80	18	12,3	12,3	93,2
	>81	10	6,8	6,8	100,0
	Kopā	146	100,0	100,0	

1.tabula atspoguļo procentuālo saslimstību ar sarkomām Latvijā atkarībā no vecuma grupām. Visaugstākā saslimstība vecuma grupā no 61g- 0g (19,2 %), bet viszemākā vecuma grupās no <18g. un >81g. ( attiecīgi pa 6,8%).



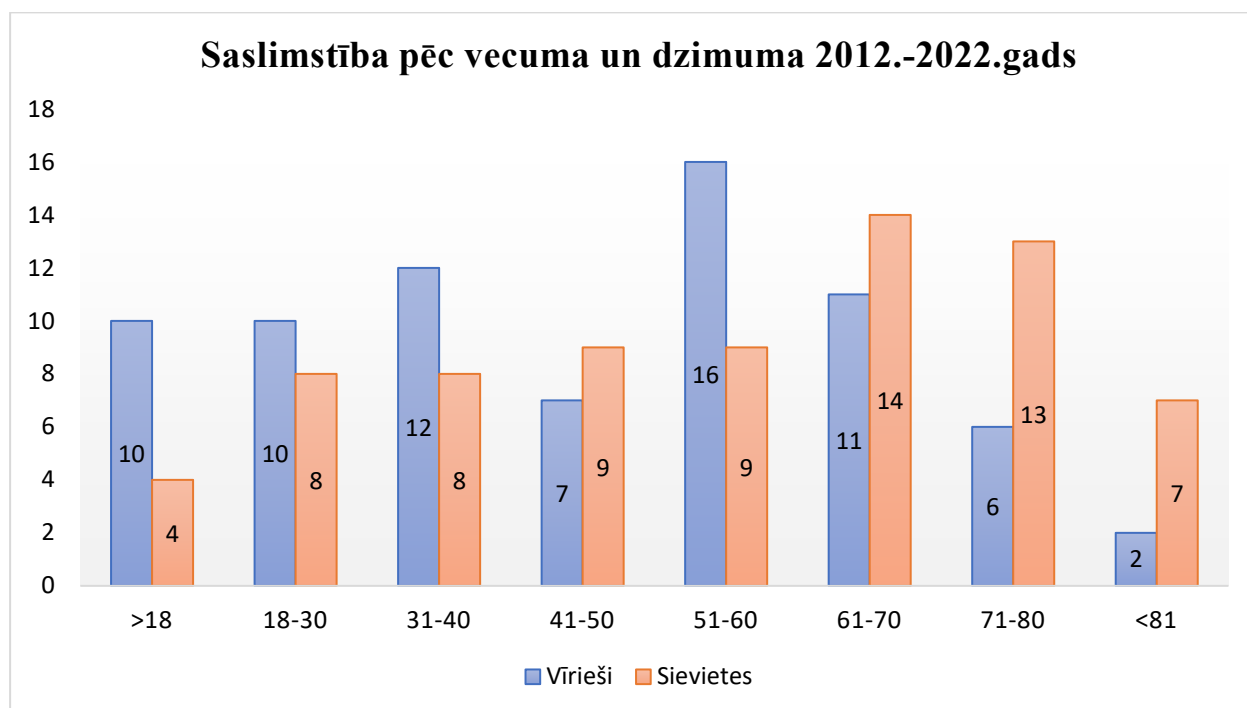
2.attēls. **Pacientu sadalījums pēc vecuma grupām**  
 Figure 2 **Distribution of Patients by Age Groups**

Kā redzāms 2.attēlā, vislielākais gadījumu skaits (N=28) ir vecuma grupā no 61 līdz 70 gadiem, kas liecina par paaugstinātu risku saslimt ar sarkomu vecākā gadagājumā cilvēkiem. Ievērojams gadījumu skaits (N=25) ir arī 51-60 gadu vecuma grupā. Vismazākais sarkomas gadījumu skaits ir jaunākajā grupā (<18 gadi) un vecākajā grupā (>81 gads).

2.tabula. *Saslimstība atkarībā no vecuma un dzimuma*  
Table 2 *Incidence depending on age and gender*

VECUMS	DZIMUMS	
	Vīrieši	Sievietes
Gadi		
>18	10	4
18-30	10	8
31-40	12	8
41-50	7	9
51-60	16	9
61-70	11	14
71-80	6	13
>81	2	7

2. tabulā ir parādīta saslimstība ar vēzi dažādās vecuma grupās atkarībā no dzimuma. Vērojama tendence, ka vīriešu saslimstība ar vēzi sasniedz maksimumu 51-60 gadu vecumā, savukārt sieviešu vidū tā sasniedz maksimumu vēlāk, 71-80 gadu vecumā. Dati arī liecina, ka abiem dzimumiem saslimstības līmenis ir salīdzinoši zems jaunākajā (<18) un vecākajā (>81) vecuma grupā. Šie novērojumi liecina par vecuma un dzimuma īpatnībām vēža saslimstībā, kas varētu būt būtiski, izstrādājot mērķtiecīgas sabiedrības veselības intervences un resursu sadalījumu onkoloģijā.



3. attēls. *Saslimstība atkarībā no vecuma un dzimuma*  
Figure 3 *Incidence depending on age and gender*

3.attēlā var novērot tendenci, ka saslimstības rādītāji ar vecumu pakāpeniski pieaug gan vīriešu, gan sieviešu populācijās. Saslimstība sasniedz maksimālos rādītājus vīriešiem vecuma grupā no 51 līdz 60 gadiem, savukārt sieviešu populācijā šis maksimums tiek sasniegts vecuma grupā no 61 līdz 70 gadiem. Pēc 60 gadu vecuma ir konstatējama izteiktāka sieviešu saslimstības dominēšana salīdzinājumā ar vīriešiem.

## **Diskusija** **Discussion**

Sarkomas incidence saistībā ar dzimumu nav pietiekoši izpētīta ne tikai Latvijā, bet arī visā pasaulē. Vidējais saslimstības līmenis pasaulē ir ap 1-3% no kopēja audzēju skaita gadā. Latvijā sarkomas incidences starpība starp sievietēm (N = 6,55 vidējais skaits gadā) un vīriešiem (N = 6,73 vidējais skaits gadā) nav tik izteikta, bet tomēr novērojama vīriešu dominance, kas atbilst Eiropas Savienības datiem (Cosci, Del Fiore, Mocellin, & Ferlin, 2023). Latvijā saslimstības līmenis ar sarkomām ir krietni zemāks, kas atbilst 0.2% no kopēja audzēju skaita gadā (N = 11 500) (Global Cancer Observatory, 2022). Tomēr, saslimstība ar sarkomām pieaug līdz ar vecumu. Saslimstības pīķis vīriešu populācijā 51 – 60 g., bet sieviešu populācijā 61 – 70 g., kas atbilst Eiropas Savienības datiem (Burningham, Hashibe, Spector, & Schiffman, 2012). Tas nozīmē, ka visaugstākā saslimstība novērojamā vecāka gadagājuma cilvēkiem, salīdzinot ar jaunākiem populācijas pārstāvjiem (Cosci, Del Fiore, Mocellin, & Ferlin, 2023). Salīdzinoši zems sarkomu sastopamības līmenis Latvijā, salīdzinājumā ar pasaules vidējo, var atspoguļot atšķirības ģenētiskajā nosliecē, vides ietekmē vai diagnostikas praksē starp populācijām. Nelielā vīriešu dominēšana, kas novērota Latvijā, sakrīt ar plašākiem tendenču novērojumiem Eiropas Savienībā, liecinot, ka var būt dzimuma bioloģiskas atšķirības sarkomu uzņēmībā vai arī atšķirības riska faktoru iedarbībā. Ar vecumu saistītais saslimšanas pieaugums sakrīt ar daudzu citu vēža veidu tendencēm, kur riska līmenis pieaug ar vecumu, sakarā ar ģenētisko mutāciju uzkrāšanos laika gaitā vai ilgākas kancerogēno faktoru iedarbības dēļ. Saslimšanas pīķis dažādās vecuma grupās vīriešiem un sievietēm var norādīt uz hormonālām izmaiņām, to ietekmi, piemēram, postmenopauzes vecuma sievietēm potenciāli paaugstinātu risku, sakarā ar hormonālā līdzsvara izmaiņām, kas var ietekmēt audzēja augšanu. Sakarā ar audzēja heterogenitāti, spēju manifestēties jebkurā organismā vietā, kā arī zemu informētību, pastāv liels nepareizas diagnozes uzstādīšanas risks. Iespējams, ka reālie saslimstības rādītāji ar sarkomām ir krietni lielāki. Šie novērojumi uzsvēra nepieciešamību pēc turpmākiem pētījumiem par sarkomu epidemioloģiju, koncentrējoties uz ģenētiskiem, vides un dzīvesveida faktoriem, kas var ietekmēt saslimšanas risku. Turklāt agrīnas slimības atklāšanas stratēģiju

uzlabošana augsta riska grupām, īpaši vecāka gadagājuma cilvēkiem, varētu būt izšķiroša, lai uzlabotu sarkomu pacientu iznākumus.

### **Secinājumi** **Conclusions**

Laikā no 2012. līdz 2022. gadam Latvijā tika diagnosticēti 146 jauni sarkomu gadījumi. Kopā 74 (50,7%) vīrieši un 72 (49,3%) sievietes. Vidējais jaunu gadījumu skaits starp vīriešiem 6,73 un 6,55 starp sievietēm, *age-standardised* incidence uz 100 000 cilvēkiem gadā ir 0,8 starp vīriešiem un 0,5 starp sievietēm, sarkomu gadījumu īpatsvars starp vīriešiem 0,11%, un 0,1% starp sievietēm, kas liecina par nenozīmīgu prevalenci vīriešu dzimuma grupā Latvijā. Vīriešu saslimstība vecuma grupās sākot no > 18 līdz 60 gadiem ir augstāka, salīdzinot ar sievietēm. Bet sākot no 61 gadu vecuma, sieviešu saslimstība pieaug. Savukārt 51-60 gadu vecuma grupā, vīriešu saslimstība bija visaugstākā (N = 16). Visaugstākā saslimstība sieviešu grupā novērojama vecuma no 61-70 (N = 13). Vīriešu saslimstība ar sarkomām pakāpeniski samazinās pēc 60 gadu vecuma, savukārt sievietēm otrādi paaugstinās, salīdzinot ar vīriešiem.

### **Summary**

This investigation sought to expand the understanding of sarcoma prevalence by analysing this category of malignant neoplasms in terms of overall incidence, gender distribution, and age-related factors. The study reveals that the mean incidence of sarcoma in the population is 13.28 cases per annum, with the average annual count of oncological patients being approximately 11.500. This represents roughly 0.1% of all cancer cases, a figure markedly lower than the average in other European Union nations, where sarcoma prevalence ranges from 1-3% of the total tumor incidence. The lower prevalence in Latvia might be attributed to the absence of a comprehensive cancer registry, leading to challenges in data collection and the prevalence of fragmented information. Furthermore, the misidentification of sarcomas as other tumor types is a notable issue. This misclassification can be attributed to the fact that sarcomas constitute a minor fraction of all cancer types, potentially leading to a lack of diagnostic experience among medical professionals. This issue is particularly acute in general medical centers, where encounters with sarcoma patients are infrequent. The study also notes an approximately equal incidence of sarcoma among males and females, correlating with the demographic composition of Latvia, where females represent 54% and males 46% of the population. Notably, the incidence of sarcoma in women increases post-61 years of age, in contrast to a decline in men. This trend may be linked to the higher life expectancy in women, which surpasses that of men by a decade.

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**AMBULATORĀ VESELĪBAS CENTRA «X»  
DARBINIEKU PROFESIONĀLĀS IZDEGŠANAS  
LĪMEŅA UN TO IETEKMĒJOŠO FAKTORU IZPĒTE  
UN REKOMENDĀCIJU IZSTRĀDE IZDEGŠANAS  
MAZINĀŠANAI DARBA VIDĒ**

***Research on the Level of Professional Burnout of The Employees of  
the Outpatient Health Centre "X" the Factors Influencing it, and  
Development of Recommendations for Burnout Management in the  
Work Environment***

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**Abstract.** *Over the past three years, the COVID-19 pandemic caused medical congestion and increased the incidence of burnout among medical professionals. In Europe, about a third of medical professionals experienced burnout. The aim of the study is to investigate the burnout rate of the staff of the outpatient health centre "X" and to develop recommendations for reducing burnout in the work environment. Methods used were scientific literature analysis, interview of the heads of the structural units of the observed outpatient centre, Maslach Burnout Inventory, qualitative data analysis, and quantitative data analysis. The research took place in Riga in spring 2022. The study results showed that the average burnout level in this outpatient centre is middle level. The most suffer from burnout functional specialists.*

**Keywords:** *burnout, burnout in outpatient health center, Covid-19, medical professionals.*

### **Ievads**

Pēdējo trīs gadu laikā vīrusa Covid-19 pandēmija radīja ārkārtīgu pārslodzi uz medicīnas sfērā iesaistīto darbinieku, kā arī visas veselības aprūpes sistēmas pārslodzi kopumā. Šī situācija pastiprināja un izgaismoja būtiskus stresa faktoros veselības aprūpes sistēmā, padarot medicīnā iesaistīto darbinieku izdegšanu, kā reakciju uz darba vietu un darba apstākļiem, par epidēmiju (Restauri & Sheridan, 2020). Pētījumi rāda, ka 40% - 50% no medicīnas darbiniekiem piedzīvo augstu izdegšanas un stresa līmeni, bet 10% -15% ir konstatēta klīniskā depresija (Rosenstein, 2019).



Pēc literatūras datiem medicīnas darbinieki pieder pie vienas no visvairāk profesionālās izdegšanas sindromam pakļautām profesijām (McKinley et al., 2020). Medicīnas darbinieku psihoemocionālā labsajūtaietkmē sniegto pakalpojumu kvalitāti, kļūdu iespēju un apdraud pacientu drošību (Chen et al., 2013). Novērots, ka profesionālās izdegšanas sindroma attīstīšanās darbiniekiem rada uzņēmumam papildu finansiālus izdevumus (Guo, Hu & Liang, 2021).

Apmēram viena trešdaļa medicīnas darbinieku dažādās Eiropas valstīs cieš no profesionālās izdegšanas sindroma. Jāpiemin, ka Latvija ir starp 9 Eiropas valstīm, kur profesionālās izdegšanas sindromu uzskata par arodslimību. Taču Latvija ir vienīgā valsts, kur šis sindroms ir iekļauts Arodslimību sarakstā (Lastovkova et al., 2018).

Darbinieku izdegšanas sindroma parādīšanos ietekmē demogrāfiskie faktori, darba vides, noslodzes un citi faktori, kā arī darba devēja atbalsta pieejamība darbiniekiem. Pamatojoties uz šo pieņēmumu, aptaujas anketā, kas bija piedāvāta uzņēmuma darbiniekiem, iekļauti arī jautājumi par demogrāfiskiem un darba vides faktoriem.

Liela loma psihoemocionālā stāvokļa uzlabošanā ir pašai organizācija jeb uzņēmumam. Lai organizācijā veiksmīgi varētu mazināt darbinieku izdegšanas līmeni, vispirms jāapzinās, kurās darba sfērās ir problēmas, kas izraisa šo stāvokli, jāapzina darba prasības un darba resursi, lai atrastu līdzsvaru starp šiem rādītājiem (Maslach & Leiter, 2010).

Pētījumā iegūtie rezultāti ir svarīgi uzņēmuma vadībai, jo uzņēmumā iepriekš netika veikta darbinieku psihoemocionālā stāvokļa izpēte.

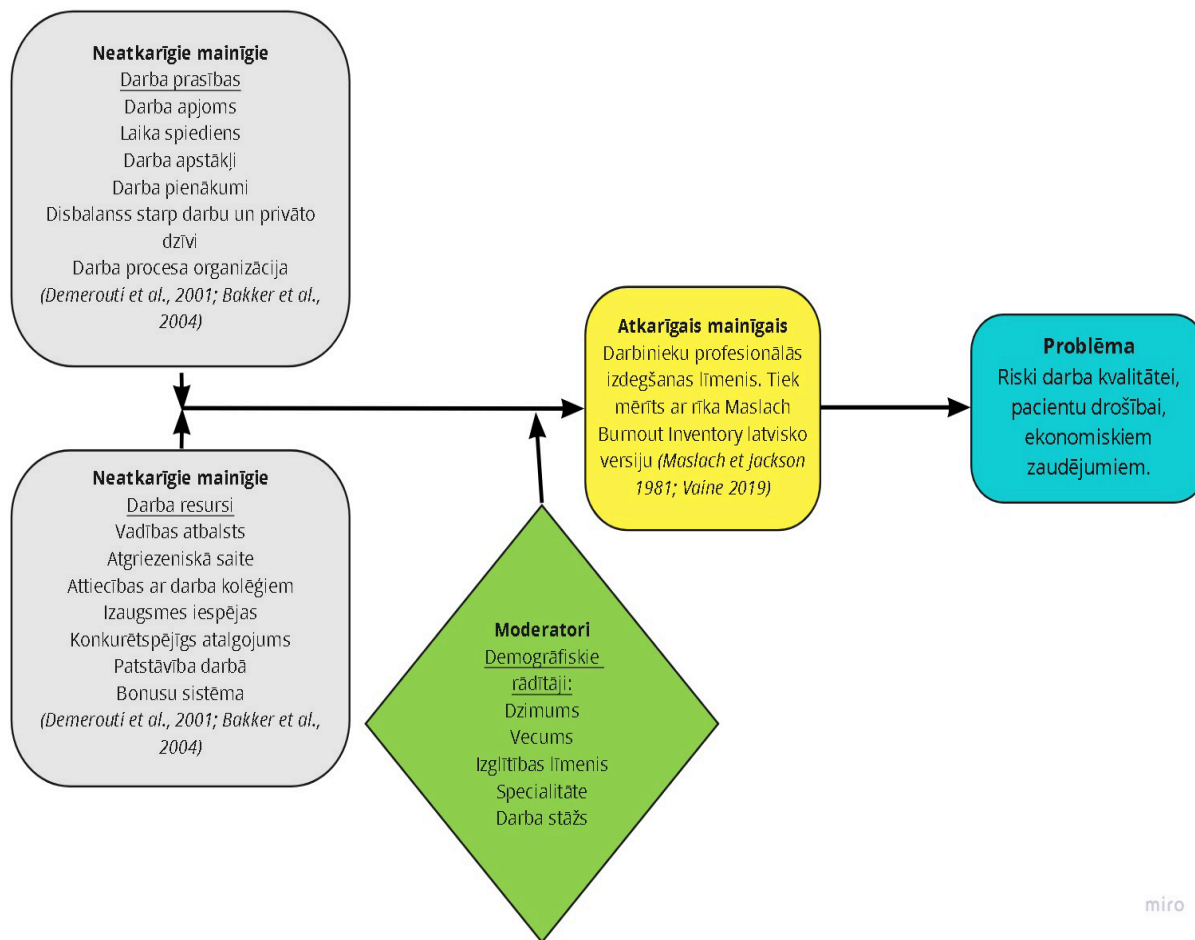
Pētījuma darba mērķis bija izpētīt ambulatorā veselības centra «X» darbinieku izdegšanas līmeni un izstrādāt rekomendācijas izdegšanas mazināšanai darba vidē.

Pētījuma metodes ietvēra zinātniskās literatūras avotu analīzi, aptauja ar Malsach Burnout Inventory anketu, intervijas, kvantitatīvo datu apstrāde IBM SPSS Statistics programmā, kvalitatīvo datu kodēšana MAXQDA programmā un sekojoša kontentanalīze.

## **Metodoloģija**

Pētījuma dizains ir jauktā tipa neeksperimentāls šķērsgriezuma pētījums. Analizējamo datu iegūšanai tiks izmantotas divas pieejas – kvantitatīvā un kvalitatīvā.

Pētījuma konceptuālo modeli veido neatkarīgie mainīgie, kas ir JDR modeļa komponentes (darba prasības un darba resursi), atkarīgais mainīgais – darbinieku profesionālās izdegšanas līmenis. Konceptuālā modeļa elementi ir detalizētāk uzskaitīti un shematiski atspoguļoti 1. attēlā.



1. attēls. *Pētījuma konceptuālais modelis.*  
 Figure 1 *Conceptual model of the research*

### Pētījuma dalībnieku atlase

Tā kā pētījuma mērķis bija izpētīt visus uzņēmuma darbiniekus, iekļaušanas kritērijs bija darba attiecības ar pētāmo iestādi un piekrišana brīvprātīgi piedalīties pētījumā. Izlases apjoms bija aprēķināts, izmantojot tiešsaistē pieejamo rīku “Sample size calculator” (www.calculator.net, 2022). Izlase ir aprēķināta, ņemot vērā ticamības līmeni 90% un pieļaujamo kļūdu iespējamību 5%:

- Anketēšana – populācija 466 darbinieki; izlase – 168 darbinieki (ticamības līmenis 90%);
- Intervijas – populācija 6 uzņēmuma struktūrvienību vadītāji, sakrīt ar izlasi.

### Kvantitatīvo datu iegūšana un apstrāde

Notika darbinieku tiešsaistes anketēšana ar iepriekš sagatavotu formu (Google Forms). Anketa sastāvēja no četrām sadaļām. Anketā pārsvarā ir slēgtā

tipa jautājumi, bet ir arī precizējoši atvērtie jautājumi, piemēram, par faktoriem, kas liek pamest darbu vai mainīt darbības sfēru.

Balstoties uz Roberts et al. (2013) un DeChant et al. (2019) pētījumu datiem, Maslačas izdegšanas anketa tika izmantota vairumā pētījumu, kā arī tiek dēvēta par “zelta standartu” izdegšanas sindroma novērtēšanā. Pētījumā izmantota Maslach Burnout Inventory latviskā versija (Hojat et al., 2004, Vaine, 2019).

Pamatojoties uz faktiem no zinātniskās literatūras par to, ka izdegšanas līmeni medicīnas un ne-medicīnas darbiniekiem ietekmē vairāki faktori, tiešsaistes aptaujā tika iekļauti sekojoši punkti: dzimums; izglītības līmenis (França & Ferrari, 2012); vecums (Lacy & Chan, 2018); profesija; darba stāžs profesijā (Dyrbye, Satele, Sloan & Shanafelt 2013); darba slodze (Shanafelt et al., 2009, 2010).

Vienā no anketas daļām tika iekļauti divi jautājumi, kuros respondenti lūgti atzīmēt sava darba prasības (*job demands*) un darba resursus (*job resources*) (Bakker, Demerouti & Verbeke, 2004; Demerouti, Bakker & Leiter, 2014).

Anketas noslēdzošajā daļā dalībniekiem tika jautāts par esošajiem izdegšanas mazinošiem pasākumiem darba vietā un ieteikumiem darba devējam to organizēšanā.

Iegūtie dati tika apstrādāti apkopotā veidā MS Excel un IBM SPSS Statistics programmās. Tika pielietota aprakstošā statistika; secinošā statistika: Pīrsona un Spīrmena korelācija, Kronbaha Alfa koeficients, normālsadalījuma K-S tests, ANOVA, Mann-Whitney tests, T-tests, Kruskal-Wallis tests.

## **Kvantitatīvo datu iegūšana un apstrāde**

Lai gūtu priekšstatu par struktūrvienību vadītāju informētību par pētāmo problēmu, viņu personīgo saskarsmi ar izdegšanas sindromu un par vadītāja lomu darbinieku izdegšanas līmeņa mazināšanā, tika sastādīta daļēji strukturētā anketa. Intervijas norisinājās attālināti – Zoom platformā. Interviju sastādīja astoņi jautājumi, kuru mērķis bija uzzināt darba devēju informētību par izdegšanas sindroma būtību un paņēmieniem tā mazināšanai darba vidē. Vienojoties ar dalībnieku, intervijas audio tika ierakstīts un vēlāk veikta tā transkripcija. Pēc transkripta izveidošanas dati tika kodēti MAXQDA-22 programmā. Saņemot rezultātu un kopsavilkumu, dati tika analizēti, pielietojot kontentanalīzes metodi.

## **Pētījuma rezultāti**

### **Kvalitatīvo datu rezultāti**

Apkopojot un analizējot intervijās saņemto informāciju, ir izdarīti šādi secinājumi.

- Visiem struktūrvienību vadītājiem ir pazīstams izdegšanas sindroms.

- Visi struktūrvienību vadītāji pareizi atpazīst izdegšanas sindroma simptomus.
- Gandrīz visi vadītāji ir pamanījuši sev vai kādam no darbiniekiem izdegšanas sindroma izpausmes.
- Lielākā daļa vadītāju atzīst, ka struktūrvienības vadītājam ir liela loma un iespējas ietekmēt un mazināt darbinieku izdegšanas līmeni, galvenokārt komunicējot pa tiešo ar darbiniekiem un sadarbojoties ar augstāko vadību risinājumu rašanai.
- Aptaujātie vadītāji zina pietiekami daudz paņēmieni kā var mazināt un novērst darbinieku izdegšanu darba vidē, taču tiek pielietota tikai maza daļa no šīm iespējām.
- Kā galveno šķērslī izdegšanas mazināšanas pasākumu īstenošanai respondenti min finansējuma trūkumu papildu darbinieku piesaistei, darbinieku algas palielināšanai un prezentācijas izdevumiem.
- Biežākie divi ieteikumi no vadītāju puses, kā varētu mazināt izdegšanas līmeni darbiniekiem, ir nodrošināt iespēju darbiniekiem bez maksas saņemt rehabilitācijas pakalpojumus un pieaicināt psihologu darbam ar kolektīvu (individuāli).
- Struktūrvienību vadītājiem ir nepieciešamas papildus zināšanas par to, kā ātri sarunas laikā ar darbinieku atpazīt sindroma attīstību un kā labāk veidot komunikāciju ar darbinieku par šo problēmu. Daži autori, Shanafelt et al., 2019 un Samet & Liebshutz, 2019, atzīst par problēmu vadītāju neinformētību par medicīnas darbinieku izdegšanu, jo mediķi bieži vien ir nevērīgi pret pašu veselību un nezina kur vērsties pēc palīdzības darba vietā.

### **Kvantitatīvo datu rezultāti**

Izvērtējot ticamību MBI rezultātiem, nosakot Kronbaha Alfa koeficientu, vērtības pārsniedz 0,7 (0,782 un 0,747), kas atbilst pieņemamam rezultātam.

Lai secinātu, vai iegūtie dati atbilst normālsadalījumam, IBM SPSS Statistcs programmā veikts K-S tests. Secināts, ka iegūtie emocionālā izsīkuma (turpmāk – EI) (( $p = 0,2$ ), ( $p > 0,05$ )) atbilst normālsadalījumam, bet personīgā snieguma samazināšanās (turpmāk – PSS) (( $p = 0,014$ ), ( $p < 0,05$ )) un depersonalizācijas (turpmāk – D) (( $p = 0,002$ ), ( $p < 0,05$ )) rezultāti neatbilst normālsadalījumam.

PSS un D elementiem pielietoja Mann-Whitney testu. Pārlicinoši statistiski nozīmīgas atšķirības ir konstatētas D rādītājam, salīdzinot rezultātus darbiniekiem, kas vēlās mainīt darbu uzņēmumā “X” pret citu un tiem, kuri nevēlās ( $p < 0,001$ ). Tāpat statistiski nozīmīgas atšķirības abiem parametriem, D

( $p = 0,007$ ) un PSS ( $p = 0,05$ ), novēroti darbinieku grupā, kas vēlās mainīt savu darbības jomu.

EI parametram pielietoja ANOVA testu un atklāja, ka statistiski nozīmīgas atšķirības EI rādītājam bija starp amatu jeb profesiju grupām ( $p = 0,009$ ) un kopējās darba slodzes visās darba vietās grupās ( $p = 0,007$ ).

D un PSS rādītājiem pielietoja Kruskal-Wallis testu, kas atklāja statistiski nozīmīgas atšķirības konstatētas līdzīgi kā ANOVA testā – amata grupā D ( $p = 0,008$ ), un kopējās slodzes grupā D ( $p = 0,018$ ) un PSS ( $p = 0,043$ ). Noskaidroti pāri, kuriem ir visstiprākās statistiski nozīmīgās atšķirības:

- Depersonalizācija:
  - medicīnas māsa un administratīvais darbinieks ( $p = 0,005$ );
  - vidējā profesionālā izglītība un augstākā izglītība ( $p = 0,063$ );
  - mazāk par pilnu slodzi un vairāk par pilnu slodzi ( $p = 0,016$ ).
- Personīgo sniegumu samazinājums:
  - pilna slodze un mazāk par pilnu slodzi ( $p = 0,0052$ ).

Uzņēmuma “X” gadījumā par visvairāk raksturīgākajām darba prasībām darbinieki atzīmē lielu darba apjomu ( $n = 98$ , 58% darbinieku), darbu bez pārtraukuma (66 atbildes jeb 39% no darbiniekiem) un disbalansu starp darbu un brīvo laiku (58 atbildes, kas sastāda 34% no respondentiem). Savukārt, ir pozitīvi, ka relatīvi maz darbinieku atzīmē sliktas darba attiecības (vien 7% no respondentiem) un neiespējamu patstāvību darbā (6%).

Attiecībā uz darba prasībām, visbiežāk darbinieki atzīmēja, ka darba vieta ir droša (97 atbildes, jeb 57%), novērtēja kolēģu un sociālo atbalstu (84 atbildes, kas sastāda 49% no respondentiem) un ērtu darba grafiku (75 atbildes, kas ir 44% no dalībniekiem). Savukārt, darba vietā pietrūkst mentorings un apmācības, uzsākot darba gaitas (par šādu pasākumu esamību nobalsoja vien 11 dalībnieki). Tikai 24 darbinieki, kas ir 14% no kolektīva, minēja, ka darba vietā pastāv priekšrocības darbiniekiem. Kā arī apmācību un profesionālās attīstības iespējas atzīmēja vien 30 darbinieki, jeb 18% no respondentiem.

Datu analīzes rezultātā noskaidrots, ka kopējais izlases izdegšanas līmenis ir sekojošs:

- emocionālā izsīkuma un rādītājs = 25,34 balles, kas atbilst vidējam izdegšanas līmenim;
- depersonalizācijas rādītājs = 7,44 balles, kas atbilst vidējam izdegšanas līmenim;
- personīgo sniegumu samazinājuma rādītājs = 31,65 balles, kas atbilst augstam izdegšanas līmenim.

Tālāk analizēti dati attiecībā uz dažādiem faktoriem, kuriem literatūrā tika atrastas statistiski ticamas atšķirības.

- Dzimums (Montero-Marín et al., 2009; Franča & Ferrari, 2012). Statistiski nozīmīgas atšķirības dzimuma grupās netika atrastas. Abās

grupās EI un D rādītāji atbilst vidējam izdegšanas līmenim, bet PSS – augstam.

- Izglītības līmenis (França & Ferrari, 2012). Netika atrastas pētnieciski nozīmīgas atšķirības starp izglītības grupām. EI un D rādītāji atbilst vidējam izdegšanas līmenim, bet PSS rādītājs – augstam. Tomēr jāpiebilst, ka darbiniekiem ar vidējo izglītību EI rādītājs ir virs augstā izdegšanas līmeņa robežas, bet D rādītājs kaut arī iekļaujas vidējā līmenī, bet ir visaugstākais starp izglītības grupām. Kaut gan jāpiebilst, ka darbiniekiem ar vidējo izglītību novērojami visaugstākie EI un D rādītāji salīdzinājumā ne tikai starp izglītības grupām, bet arī starp visiem apskatītajiem faktoriem.
- Vecums (Lacy & Chan, 2018). Netika atrastas atšķirības vecuma grupās. Visās vecuma grupās EI un D ir vidējā līmenī, (izņemot grupu 51-60 gadi, kur D ir zemā līmenī). PSS rādītāji visām grupām ir augstā līmenī. Pēc Dyrbye et al., 2013, datiem, visaugstākais D rādītājs ir vecumā jauniešiem speciālistiem, kas pētāmajā gadījumā neapstiprinājās.
- Profesija (Buerhaus, Auerbach & Staiger, 2009). Atšķirības, kas atrastas šajās grupās ir statistiski nozīmīgas. Visām profesiju grupām EI rādītājs atbilst vidējam izdegšanas līmenim, bet funkcionāliem speciālistiem tas ir vislielākais un atrodas pie augstā līmeņa robežas. Otrais lielākais EI rādītājs ir administratīviem darbiniekiem, un tad ārstiem-speciālistiem. Kas attiecās uz D rādītāju, tas arī atbilst vidējam izdegšanas līmenim, izņemot medicīnas māsas un divus citu medicīnas specialitāšu darbiniekus, kuriem tas ir zemā līmenī. Visaugstākais D rādītājs ir administratīviem darbiniekiem, kam seko funkcionālie speciālisti un ārsti-speciālisti. Spriežot par PSS rādītāju, visām grupām tas atbilst augstam izdegšanas rādītājam. Viszemākais šī parametra vērtējums (augstāks izdegšanas līmenis) novērots funkcionāliem speciālistiem, kam seko administratīvie darbinieki un medicīnas māsas.
- Darba stāžs profesijā (Dyrbye et al., 2013). Statistiski ticamas atšķirības netika novērotas. EI un D rādītāji atbilst vidējam izdegšanas līmenim, bet PSS – augstam.
- Darba slodze (Shanafelt et al., 2009, 2010). Pārlicinoši atšķirības atrastas jautājumā par kopējo darba slodzi. Darbiniekiem, kas kopā visās darba vietās strādā nepilnu slodzi, EI u PSS rādītāji atbilst vidējam izdegšanas līmenim, bet D rādītājs – zemam. Savukārt, tiem, kuri kopumā strādā pilnu slodzi EI rādītājs ir augstāks, bet joprojām atbilst vidējam līmenim; D rādītājs ir vidējā līmenī; PSS rādītājs atbilst augstam izdegšanas līmenim. Vislielākās visu trīs rādītāju vērtības ir darbiniekiem, kas strādā vairāk par pilnu slodzi – EI un PSS atbilst

augstam izdegšanas līmenim, bet D - vidējam (un ir vislielākais starp darba slodzes grupām).

Var secināt, ka uzņēmuma “X” darbinieku izdegšanas līmenis lielākoties ir saistīts ar profesiju un kopējo darba slodzi.

## **Secinājumi**

Pētījumā konstatēts, ka uzņēmuma “X” darbinieku izdegšanas līmeni emocionālā izsīkuma un depersonalizācijas rādītajos atbilst vidējam līmenim, bet personīgo sniegumu samazinājuma rādītājā – augstam.

Pētāmajā dalībnieku izlasē visvairāk izdegšanas sindroma izpausmes ir vērojamas funkcionāliem speciālistiem, kuriem seko administratīvie darbinieki un ārsti-speciālisti. Funkcionāliem speciālistiem vienīgajiem no pētāmajām profesiju grupām emocionālā izsīkuma rādītājs, kaut gan iekļaujas vidējā līmenī, bet ir pie augsta izdegšanas līmeņa robežas.

Konstatētas statistiski ticamas saistības dažām darba prasībām un resursiem ar MBI elementiem. Darba prasības - “Emocionāli izsmeļoši darba uzdevumi” un “Disbalanss starp darbu un brīvo laiku/ privāto dzīvi (nepietiek laika ģimenei vai hobijiem)”. Darba resursi - “Patstāvība darbā”, “Droša darba vide”, “Sociālais/ kolēģu atbalsts”, “Ērts darba grafiks”.

Atrasti vairāki statistiski ticami pierādījumi, ka izdegšanas sindroma elementu izpausmes ir saistītas ar dažiem faktoriem:

- emocionālam izsīkumam ar profesiju un kopējo darba slodzi visās darba vietās;
- depersonalizācijai - ar profesiju un kopējo darba slodzi visās darba vietās;
- tāpat depersonalizācijai atrasta saistība ar darbinieka vēlēšanos mainīt darba jomu;
- personīgo sniegumu samazinājumam - ar kopējo darba slodzi visās darba vietās.

Apkopojot, secināms, ka no izdegšanu ietekmējošajiem faktoriem statistiski nozīmīgu saistību ar visiem MBI elementiem uzrādīja kopējā darba slodze visās darba vietās.

Struktūrvienību vadītājiem ir pietiekamas zināšanas par izdegšanas sindroma jēdzienu un izpausmēm. Savukārt, vadītāji paši atzīst, ka nepietiek zināšanu sindroma simptomu atpazīšanā sarunas laikā ar darbinieku un pareizās komunikācijas vadlīniju sarunā ar darbinieku par izdegšanu un iespējamo palīdzības sniegšanu. Gandrīz visi struktūrvienību vadītāji zina pietiekami daudz izdegšanas vai tās risku mazinošos pasākumus, bet ne visās filiālēs tie ir īstenoti. Kā galvenais šķērslis tika minēts filiāļu finansējums un darbinieku finansējums.

Pētījumā iegūtie rezultāti parāda ambulatorā medicīnas centra darbinieku izdegšanas līmeni. Pētījumā analizēti dati ne tikai par medicīnas darbiniekiem, bet

arī administratīvajiem darbiniekiem, kas paver plašāku skatu uz uzņēmuma darbinieku psihoemocionālo stāvokli. Tā kā pētījumā atrastas atšķirības izdegšanas izpausmē profesiju grupās, vadītājiem jāpievērš lielāka uzmanība darbinieku grupām, kas vairāk pakļautas izdegšanai, pilnveidojot to darba organizāciju. Aptaujā iegūtie rezultāti kopumā norāda uz uzņēmuma darba organizācijas pilnveidošanas un attīstības iespējām.

### Priekšlikumi

Priekšlikumi formulēti, balstoties uz literatūrā pieejamiem ieteikumiem izdegšanas un tās risku mazināšanai darba vidē, kā arī uz pētījuma gaitā veiktajiem secinājumiem.

1. tabula. *Priekšlikumi izdegšanas sindroma mazināšanai*  
Table 1 *Recommendations for alleviating burnout syndrome*

<b>Darbinieku psihoemocionālā stāvokļa uzlabošanu veicinošie pasākumi</b>	<b>Darbinieku finansiālo labklājību veicinošie un uz darba procesu pilnveidošanu orientētie pasākumi</b>	<b>Uzņēmuma administrācijas un darbinieku savstarpēju komunikāciju veicinošie pasākumi.</b>	<b>Uz darba vides uzlabošanu un atbilstību darba higiēnas prasībām vērstie pasākumi.</b>
Uzņēmuma darbinieku psihoemocionālā stāvokļa novērtēšana reizi gadā ar anketēšanas palīdzību	Pārskatīt darbinieku atalgojuma politiku, padarot to konkurētspējīgāku.	Struktūrvienību vadītājiem veidot regulāras sanāksmes ar darbiniekiem, skaidrojot izmaiņas un jauninājumus uzņēmumā.	Izveidot vietni iekšējā mājaslapā, kur darbinieki var iesniegt priekšlikumus darba vides uzlabošanai. Ieviešot izmaiņas darba vidē ņemt vērā darbinieku priekšlikumus.
Apmācības struktūrvienību vadītājiem, darbiniekiem un speciāliste par izdegšanas sindroma būtību, atpazīšanas iespējām sarunā un pareizu komunikāciju ar darbinieku/kolēģi, kuram ir konstatēta vai ir risks attīstīties izdegšanai.	Nodrošināt atbilstošu esošajam darba apjomam darbinieku skaitu (gan administratīvo darbinieku, medmāsu, ārstu, gan funkcionālo speciālistu vidū).	Struktūrvienību vadītājiem nepieciešamības gadījumā vienoties ar darbinieku neformālai sarunai, atbalsta vai palīdzības sniegšanai.	Sekot līdzi darba higiēnai, lai darbinieki ievēro normatīvajos aktos noteikto pusdienu pārtraukumu.
Nodrošināt darbiniekiem rehabilitācijas pakalpojumu saņemšanu bez maksas vai ar atlaidi.	Pielietot Lean metodes darba procesu optimizācijā un birokrātiskā sloga mazināšanā gan medicīnas, gan administratīvajiem darbiniekiem. Veidot darba grupas konkrēto darba procesu optimizēšanai.	Uzlabot darbinieku savstarpējo komunikāciju, rīkojot kopīgos pasākumus ārpus darba vides vismaz divas reizes gadā, par pasākumu veidu un formātu vienojoties ar darbiniekiem.	Atpūtas istabu ierīkošana saskaņā ar darbinieku ieteikumiem un ievērojot normatīvajos aktos noteiktās prasības.



Nodrošināt psiholoģiskās palīdzības programmu darbiniekiem.			Rast iespēju nodrošināt filiālēm finansējumu reprezentatīviem un atpūtas izdevumiem.
Rast iespēju atļaut darbiniekam izvēlēties vienu brīvu dienu reizi divos vai trijos mēnešos.			

## Summary

Over the past three years, the Covid-19 pandemic caused medical congestion and increased the incidence of burnout among medical professionals. In Europe, about a third of medical professionals experience burnout. The aim of the study is to investigate burnout rate of the staff of the outpatient health center "X".

As a result of the survey, it was found that the total burnout rate of the staff of the outpatient health center "X" corresponds to the average (components of emotional exhaustion and depersonalization), but the rate of decrease in personal performance corresponds to a high burnout rate. Associations with different demographic factors and components of the JDR model with each of the three elements of burnout syndrome have been revealed.

The results of the interviews confirm that the heads of the structural units are familiar with the concept and essence of burnout syndrome, with measures and methods to reduce it in the work environment. In turn, additional knowledge is needed about recognizing the symptoms of burnout syndrome during a conversation with an employee, as well as about establishing proper communication with an employee who is experiencing burnout symptoms.

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# ADULT PHYSICAL ACTIVITY, SEDENTARY BEHAVIOUR AND SLEEP QUALITY IN THE DIGITAL TRANSFORMATION ERA

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**Abstract.** *The digital transformation era increases population health risks associated with lack of exercise, as well as emphasizes the role of an active lifestyle within sustainable socio-economic development. Digitalization is one of the main reasons for setting significant public health priorities: poor or insufficient sleep and physical inactivity. The aim of the research was to study the physical activity (PA), sedentary behaviour (SB) and sleep duration of the population measured by a tri-axial accelerometer. Methods: The study is based on the project “EUPASMOS”, where PA, SB, and sleep-time of the participants (n = 369) was measured 24/7 by a tri-axial accelerometer (UKK RM42, UKK Terveyspalvelut Oy, Tampere, Finland) for a week-long period. The participants mostly spent their waking hours in a sedentary state. The mean duration of sedentary behaviour was 7h 52min. The participants took an average of 9584 steps a day. They also engaged in light PA for 4h 15min, and moderate-to-vigorous PA for 1h 16min. The mean duration of sleep was 5h 46min. The results showed that the insufficient sleep and physical inactivity of the participants are serious health risks in the digital transformation era. Future research should focus on the effect that various components of physical activity (dose, mode, timing) have on sleep.*

**Keywords:** *adult physical activity, EUPASMOS, sedentary behaviour, sleep quality.*

## Introduction

Promoting physical activity during development is a public health priority, and many studies emphasize the benefits of a variety of structured and unstructured activities in preventing non-communicable diseases and promoting health (Colella & Bellantonio, 2019). Daily structured and unstructured motor activities also help to promote individual development of personality. An in-depth

study of physical activity among the working age population (18–59 years old) is drawing ever-increasing interest (Herrmann et al., 2024).

The digitalization era promotes a sedentary lifestyle, but human capital is the key to sustainable development, as physical capital, information technology and other factors of production may not work without it (Qureshi, 2023). Research-based evidence shows that the amount of physical activity and sedentary behaviour patterns have a negative impact on health. Therefore, one of the most important directions to be considered by policymakers is related to the opportunity to promote physical activity in society and reduce inactivity by implementing these changes in all areas of life (Stamatakis & Hamer, 2011).

Poor sleep quality is significantly associated with poor quality of life (Lee, Chung, & Kim, 2021). The aging process of humans is directly related to sleep disorders, where insomnia has a negative impact on the quality of life of middle-aged and elderly people, altering their cognitive and metabolic functions. Moreover, research indicates that physical activity is positively related to improvement in sleep quality (Silva et al., 2023). Such findings were also obtained in previous studies, where the positive effects of regular and dosed physical activity on changes in lifestyle were noted, where physical activity can serve as one of the non-pharmacological means of sleep regulation (Léger, Poursain, Neubauer, & Uchiyama, 2008). Furthermore, research suggest that individuals who participate in moderate physical activity experience fewer complaints of sleep disorders and enjoy enhanced sleep quality (Sejbuk et al., 2022). Additionally, they exhibit elevated levels of cognitive skills and cognitive functions (Robles-Granda et al., 2021), increased work abilities, and productivity (Tarro, Llauro, Ulldemolins, Hermoso & Sola, 2020).

There is also a correlation between adult physical activity, sedentary behaviour, and sleep quality (Koohsari et al., 2023). A full-fledged sleep is an important factor in maintaining health and improving well-being. When studying the relationship between sleep quality and physical activity, and sedentary lifestyle in the Japanese adult population with the help of accelerometers, a statistically reliable impact of physical activity on the sleep quality of middle-aged women was found, while no such relationship was found for men within the scope of the study (Koohsari et al., 2023). The amount of sleep necessary for each age group is different, but on average it is 7 to 9 hours (Paruthi et al., 2016; Watson et al., 2015). However, statistics show that a third of adults spend less time sleeping than is recommended (Saelee, Haardörfer, Johnson, Gazmararian & Suglia, 2023; Sin, Wen, Klaiber, Buxton & Almeida, 2023). Research analysis indicates that insufficient sleep negatively affects cardiovascular, endocrine, and immune function, body composition, and the mortality risk (Cappuccio, D'Elia,

Strazzullo, & Miller, 2010; Cappuccio & Miller, 2017; MartinezAguirre-Betolaza et al., 2019).

Insufficient sleep duration and poor sleep quality have also been shown to correlate with limited physical activity, where better sleep quality is more often associated with more intense levels of physical activity (Stefan et al., 2018). Overall, results suggest that increasing PA levels will improve sleep and reduce SB (Mead, Baron, Sorby, & Irish, 2019), although some studies found little or no effect on total SB time reduction (Kredlow, Capozzoli, Hearon, Calkins & Otto, 2015). One possible method for estimating PA intensity is the use of metabolic equivalents (METs) (Ainsworth et al., 2011), where the intensity of physical activity can be expressed in a metabolic equivalent of a task - MET, which is the ratio of work metabolic rate to a standard resting metabolic rate of 1.0 ( $4.184 \text{ kJ} \times \text{kg}^{-1} \times \text{h}^{-1}$ ), 1 MET is considered a resting metabolic rate obtained during quiet sitting (Ainsworth et al., 2000). The Pate et al. (1995) model classifying the MET intensity of PAs: light, < 3 METs (< 4 kcal X min<sup>-1</sup>); moderate, 3-6 METs (4-7 kcal X min<sup>-1</sup>); vigorous, > 6 METs (> 7 kcal X min<sup>-1</sup>), while sedentary behaviour (SB), 1-1.5 MET, and light-intensity PA was further specified (1.6–2.9 MET) (Pate, O'Neill & Lobelo, 2008).

Physical inactivity is one of the four leading risk factors for global mortality (WHO, 2022), non-communicable diseases, mental health conditions (Santos et al., 2023), and an accurate measurement of physical activity (PA) remains a challenge (Helmerhorst, Brage, Warren, Besson, & Ekelund, 2012). Moreover, physical inactivity is linked to sleep quality (Yang, Shin, Li & An, 2017; Creasy et al., 2019; Jeong et al., 2021; Arakaki et al., 2022). Poor or insufficient sleep and physical inactivity are significant public health priorities (Kline, 2014) in the digital transformation era. Sleep is classified into three categories: awake, restless, and restful (van Hees et al., 2015; Vasankari et al., 2019). Additional research into the relationship between physical activity and sleep is important.

The aim of the research was to study the physical activity (PA), sedentary behaviour (SB), and sleep-time of the population measured by a tri-axial accelerometer.

## **Methodology**

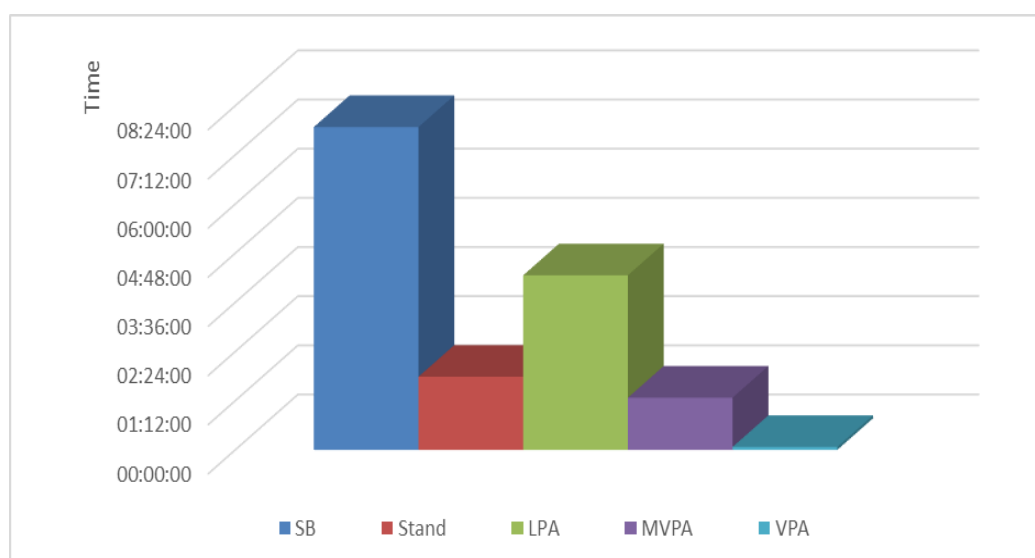
To reach the aim of the research, the physical activity (PA), sedentary behaviour (SB), and sleep-time of the population was measured 24/7 by a tri-axial accelerometer (UKK RM42, UKK Terveyspalvelut Oy, Tampere, Finland) for a week-long period. The accelerometer was worn on an elastic hip-band during waking hours, and on a wristband attached to a non-dominant wrist during bedtime (sleeping), except during water activities (e.g., swimming, showering, sauna visits). PA-parameters were based on the mean amplitude deviation (MAD) of acceleration analysed in 1 min exponential moving average (epoch length 6s).

The assessment of SB (e.g., sitting and laying down) and standing was based on the angle for posture estimation (APE). The sleep measurement was based on the periods of non-dominant wrist movement (of SB, standing (Stand), light PA (LPA), moderate-to-vigorous PA (MVPA), sleep) and the mean number of daily steps. The study is based on the European project “EUPASMOS”, where the PA, SB, and sleep-time of the participants (n = 369 adults) was determined. Descriptive and inferential statistics were used for data analysis.

## Research Results

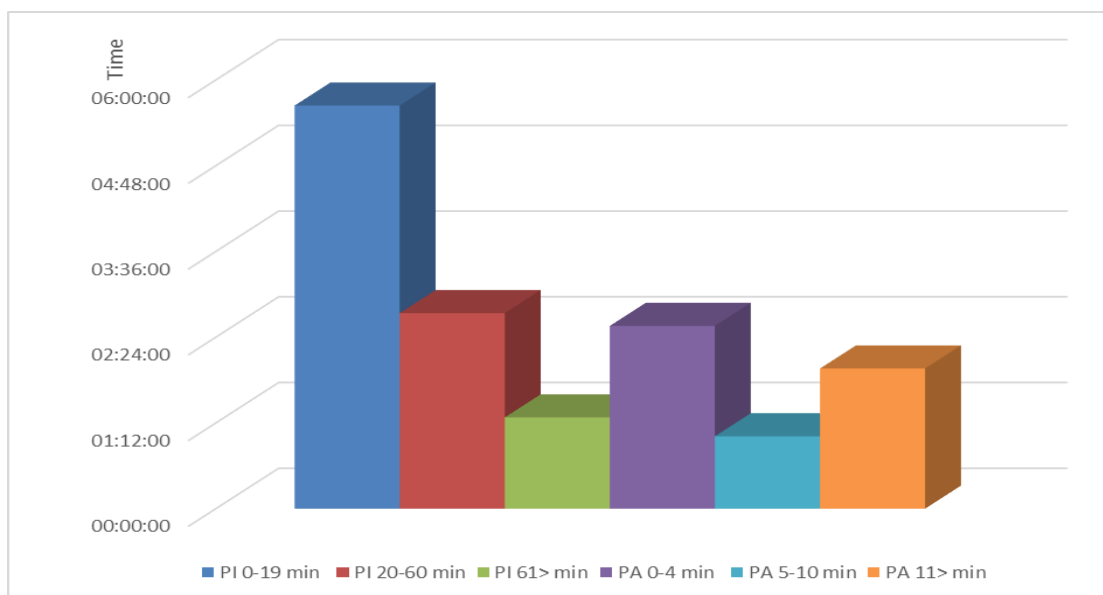
The research participants wore accelerometers for an average of 22 hours and 19 minutes every day during the seven-day period, of which it was worn on an elastic hip-band during waking hours for 15 hours and 12 minutes, and on a wrist-band attached to a non-dominant wrist during bedtime (sleeping) for 7 hours and 7 minutes, except during water activities (e.g., swimming, showering, sauna visits), which amounted to 1 hour and 41 minutes.

The accelerometry data show that the research participants are sedentary for an average of 7 hours and 52 minutes per day, standing for 1 hour and 47 minutes, performing light PA for 4 hours and 15 minutes, performing moderate-to-vigorous PA for 1 hour and 16 minutes, and performing vigorous PA for an average of only 4 minutes a day. Therefore, for more than 50% of the average waking hours per week adults are sedentary, for 12% of the average waking hours per week they are standing, and for 36% of the average waking hours per week, they are engaging in PA (Fig.1).



*Figure 1 Characteristics of the Average Adult Behaviour per Day (h/min/sec) per Week During Waking Hours (n= 369)*

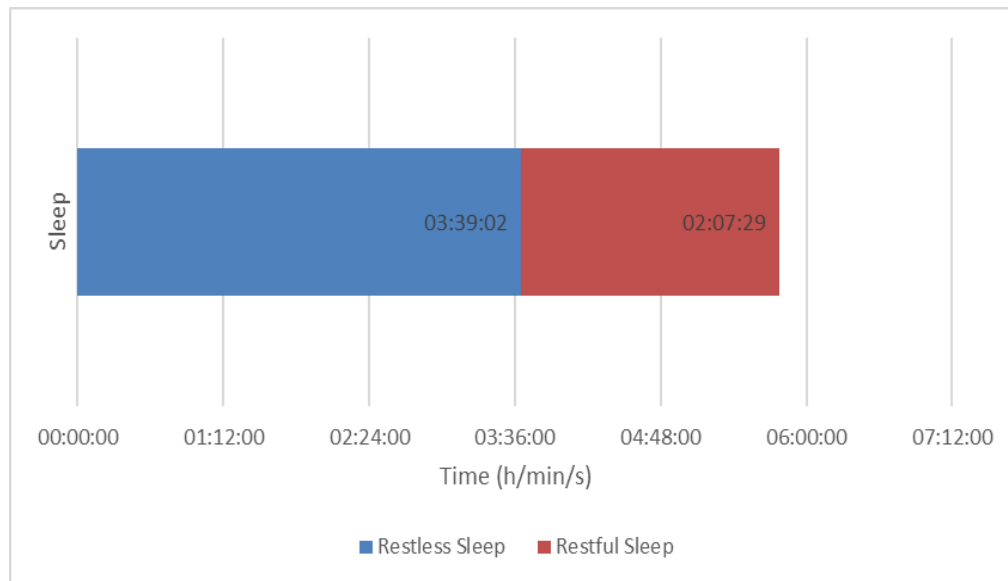
The adult physical activity time (MET > 1.5) from bouts less than 5 minutes is performed for 2 hours and 33 minutes, while physical activity time (MET > 1.5) from bouts between 5-10 minutes is performed for 1 hour, and physical activity time (MET > 1.5) from bouts over 10 minutes is performed on average for 1 hour and 57 minutes per day during the week. Therefore, for more than 46% of the average waking hours per week adults engage in short-term PA, which are shorter than 5 minutes, while 18% of the activity time is spent on 5-10 min long PA, and 36% of the activity time is spent on more than 10 min long PA (Fig.2).



**Figure 2 Characteristics of the Average Adult Physical Activity (PA) and Physical Inactivity (PI) per Day (h/min/sec) per Week During Waking Hours (n=369)**

In turn, the adult physical inactivity time is characterized by immobility or stationary time (MET < 1.5) from bouts less than 20 minutes for an average of 5 hours and 38 minutes per day during the week, stationary time (MET < 1.5) from bouts between 20-60 minutes for 2 hours and 44 minutes, while inactivity longer than 60 minutes amounts for 1 hour and 58 minutes of the average waking hours per week. Furthermore, physical inactivity lasting less than 20 minutes amounts to 58% of total sedentary time during average waking hours of adults per week.





*Figure 3 Characteristics of the Average Adult Sleep Quality per Week (n=369)*

Adults sleep an average of 5 hours and 46 minutes per day per week, where restless sleep time is 3 hours and 39 minutes, during which medium movement can be observed, and restful sleep time is 2 hours and 7 minutes, which is characterized by low movement. On average, restless sleep time constitutes 63% of the total sleep time for adults per day per week (Fig.3). Moreover, adults took an average of 9584 steps per day per week.

Correlation coefficients between the average steps per day and restless sleep time ( $r_s = -0.117$ ,  $p < 0.05$ ) is very low, but between the average sedentary time and restless sleep time ( $r_s = -0.209$ ,  $p < 0.01$ ), restful sleep parameters ( $r_s = -0.189$ ,  $p < 0.01$ ) are low.

## Discussion and Conclusions

The participants mostly spent their waking hours in a sedentary state. The research results show that the mean duration of adult sedentary behaviour is 7h 52 min, while the study of the European population shows that only 7% of the population spend 7h 31min to 8h 30min sitting on a usual day, but majority of respondents (44%) report that they sit for between 2 hours 31 minutes and 5 hours 30 minutes on a usual day (European Commission, Directorate-General for Education, Youth, Sport and Culture, 2022).

On average, the participants took 9584 steps a day, and 10 000 steps a day is a reasonable target for healthy adults (Tudor-Locke et al., 2011). The research results show that adults engage in light PA for an average of 4h 15min per day, while the time spent on moderate-to-vigorous PA is 1h 13min. However, the World Health Organization 2020 guidelines on physical activity and sedentary behaviour recommend that all adults should undertake at least 150–300 min of

moderate-intensity, or 75–150 min of vigorous-intensity physical activity, or some equivalent combination per week (Bull et al., 2020). Furthermore, the research indicates that adults perform vigorous-intensity physical activity for only 4 minutes a day, which in turn shows that it will not be possible to implement the recommendations of the World Health Organization and reach the recommended 75–150 min per week. Nonetheless, the research participants exceeded the recommended 150–300 min of moderate-intensity PA.

The recommended threshold value for adult sleeping time is more than 7 hours per night (Chaput et al., 2018; Paruthi et al., 2016; Watson et al., 2015), but the research results suggest that the mean sleeping time of the research participants is only 5h 46 min, which is much less than recommended, restless sleep time is 3 hours and 39 minutes, and restful sleep time is 2 hours and 7 minutes. Differs from Yang et al. (2017) research, where no association between sedentary behavior and poor sleep quality was observed, this research contradicts and low association between sedentary behavior and sleep quality was observed. Physical inactivity can cause insufficient sleep.

The results mirror that the insufficient sleep and physical inactivity of the participants are serious health risks in the digital transformation era. Future studies should investigate whether increasing light, moderate or vigorous intensity physical activity (dose, mode, timing) and decreasing sedentary time improves sleep quality in different adult groups.

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# EFFECTIVENESS OF THE PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION METHOD APPLICATION ON UPPER LIMB FUNCTIONS IN PATIENTS AFTER STROKE: A SYSTEMATIC REVIEW OF LITERATURE

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**Abstract.** *The brain damage caused by a stroke can lead to severe and long-lasting physical and mental health problems, which can have a significant impact on human quality of life. Although restoring gait parameters in stroke patients is one of the most important rehabilitation goals, currently around 80% of stroke survivors have some degree of upper limb motor impairment. Several authors have shown that restoration of upper limb function is often more difficult to achieve and requires a longer rehabilitation period. Proprioceptive neuromuscular facilitation (PNF) is thought to be one of the most common neurophysiological techniques used by physiotherapists in post-stroke rehabilitation. The aim is to evaluate the effectiveness of proprioceptive neuromuscular facilitation (PNF) in improving upper limb function in patients after stroke through a systematic literature review. The research inquiry was performed by searching through various online databases until February 2023. Following the PRISMA 2020 guidelines, studies were selected using the PICO model and its elements, and based on the inclusion and exclusion criteria. The quality of the selected studies was assessed using the PEDro scale. The review examined five studies on PNF effects in 210 stroke patients, all scoring six or more on the high-quality PEDro scale. Patients were, on average, 52 to 63 years old. Four of the five studies, using the Arm Motor Ability Test and Fugl-Meyer assessment, showed statistically significant improvements in upper limb motor ability and function post-PNF intervention. One study assessing self-care functional ability revealed significant improvements in the Barthel index for both experimental and control groups. Spasticity assessment with the Ashford scale in one study indicated a statistically significant reduction in upper limb spasticity in both groups. Yeole et al. found significant improvements in active range of motion using a manual goniometer in shoulder and elbow joints and wrist joint flexion, extension, and radial deviation for PNF-applied participants.*

**Keywords:** *proprioceptive neuromuscular facilitation, rehabilitation, stroke, upper limb.*

## Introduction

Stroke is defined as a clinical syndrome characterized by an acute, focal neurological deficit caused by damage to the blood vessels of the central nervous

system, or by an infarction or hemorrhage. According to data published by the World Health Organization, stroke is the second leading cause of death and the third leading cause of disability worldwide (Murphy & Werring, 2020; Singh, 2021).

Globally, 15 million people suffer from stroke each year, while 5 million becoming permanently disabled with hemiparesis, spasticity and other disorders that impair the quality of life of victims, and in 2017 stroke was among the top five causes of disability in high-income countries and worldwide (Nogueira et al., 2021; Clery, Bhalla, Rudd, Wolfel & Wang, 2020).

People may develop cognitive and motor impairments after a stroke, as well as sensory impairments, somatosensation, balance, and coordination problems. Although restoring gait parameters in stroke patients is one of the most important rehabilitation goals, currently around 80% of stroke survivors have some degree of upper limb motor impairment. Ingram et al (2021) show that restoration of upper limb function is often more difficult to achieve and requires a longer rehabilitation period (Ingram, Butler, Brodie, Lord & Gandevia, 2021).

In 2013, it was estimated that 900,000 people in the UK were living with the effects of a stroke. Approximately 70% of these people will have altered hand and arm function, and 40% will be left with permanent limitations in upper limb function (Purton, Sim & Hunter, 2021).

Upper limb impairment compromises reaching, grasping, and other skills, partially or completely interfering with activities of daily living and reducing an individual's quality of life (Nogueira et al., 2021).

Neurorehabilitation techniques aim is to develop neuroplasticity and help restore motor function. Proprioceptive neuromuscular facilitation (PNF) is thought to be one of the most common neurophysiological techniques used by physiotherapists in rehabilitation after a stroke. Although less studied compared to other rehabilitation methods such as mirror therapy and virtual reality, recent studies have shown that PNF is one of the effective physiotherapy methods that facilitate stroke patients' recovery and can effectively improve upper limb function (Tanabe et al., 2016). However, to date, based on the available information, no systematic review can be identified that investigated the effect of the PNF technique in improving upper limb function in patients after stroke.

The aim of this study is to evaluate the effectiveness of proprioceptive neuromuscular facilitation (PNF) in improving upper limb function in patients after stroke through a systematic literature review.

**Research objectives:** Following the PRISMA 2020 guidelines, using the PICO (Population, Intervention, Comparison, and Outcomes) model and its elements, and based on the inclusion and exclusion criteria, to select studies on the effectiveness of the proprioceptive neuromuscular facilitation method in improving upper limb function in patients after stroke; Assess the quality of the selected studies using the PEDro (Physiotherapy Evidence Database scale)

criteria; Summarise and analyse in a structured way the results of the studies on the effectiveness of the proprioceptive neuromuscular facilitation method in improving upper limb function in patients after stroke.

### **Literature review**

Proprioceptive neuromuscular facilitation is a treatment concept pioneered by Dr Herman Kabat in 1940, mainly used for orthopedic and neurological patients (as well as other types of patients). The PNF technique is based on the principles of motor control and its evolution, as well as neurophysiology; the focus is mostly on external factors to perform quality movement, such as vision, hearing, proprioception and others (Brakovska, 2010).

PNF stretching techniques are widely used in clinical settings to increase active and passive joint range of motion, improve muscle strength, flexibility and endurance to optimise movement performance and rehabilitation (Adler, Beckers & Buck, 2008).

The main goal of therapy is to restore normal motor control so that quality movements are restored sequentially based on the principles of normal motor development, which in turn will enable the patient to rehabilitate to the maximum possible level of functioning (Adler, Beckers & Buck, 2008).

Dorothy Voss points out that muscle synergy plays an important role in the development of movement as it ensures efficient and coordinated muscle action. Upper limb synergy is a complex process consisting of multiple muscles working together to provide efficient and coordinated movement. These muscles are involved in both stabilising functions and movement. The PNF technique is one way of improving the reflex ability of muscles and stimulating synergy (Voss, Ionta & Myers, 1968).

PNF is based on a number of key principles that improve neuromuscular response and functional performance. One of the principles is muscle irradiation, which involves the contraction of the strongest muscle group to stimulate the contraction of the weakest muscle group. Joint mobilisation is also used to improve joint mobility and range of movement. PNF techniques use patterning, which mimics functional activities and involves the coordination of several muscle groups. Patterns can be linear, diagonal, spiral, bilateral, and unilateral. Manual contact is important to provide feedback and facilitate the desired movement or stretch. Verbal instructions are used to help the patient focus on the desired movement or muscle contraction (Voss, Ionta & Myers, 1968).



## **Materials and Methodology**

The review was planned and conducted in accordance with the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines (Page et al., 2021).

In February 2023, the search and selection of studies in online databases such as PubMed, ScienceDirect, EBSCOhost, GoogleScholar, Cochrane Library, and Research Gate were launched. The systematic review included studies published between 2014 and 2023. Studies were searched using the keywords "Proprioceptive neuromuscular facilitation or PNF" with "post-stroke", "stroke rehabilitation", "upper extremity or limb", "hemiplegia", "spasticity", and "function" in various combinations.

The PICO model was used to formulate the research question that would determine the relevance of the articles and the limits of the study. The PICO model is the most commonly used model for structuring clinical questions, as it includes all the key elements required for the target question (Znotina, 2014).

The online reference organisation tool EndNote 20 was used to select the scientific articles.

The methodological quality of the studies included in the systematic review was assessed using the PEDro. The PEDro scale is currently used as a quality assessment tool for randomised clinical trials or controlled trials. The PEDro scale consists of 11 criteria, which are scored 'yes' or 'no' (1 or 0) depending on whether the criterion is explicitly met in the study. Low study quality is indicated by a score  $\leq 3$ , fair study quality is indicated by a score of 4-5, good study quality is indicated by a score of 6-8 and excellent study quality is indicated by a score of 9-10, although it is important to note that this classification is not validated (Cashin, 2020).

Research articles that met all the following criteria were included in the review:

- 1) people with stroke - acute, sub-acute or chronic;
- 2) completed and available in full text format;
- 3) published between 2013 and 2023;
- 4) Design: randomised controlled trials, controlled clinical trials, and trials that include a before-after group analysis (without a control group);
- 5) PNF was applied as a physiotherapy method to improve upper limb function in patients after stroke.

Research articles were omitted from the analysis if they met any of the specified exclusion criteria:

- 1) Participants were less than 18 years of age;
- 2) were not available in English;
- 3) methodological quality score lower than 6 on the PEDro scale;
- 4) inadequacy of purpose and/or methodology.

## Results

### Results of the selection of studies

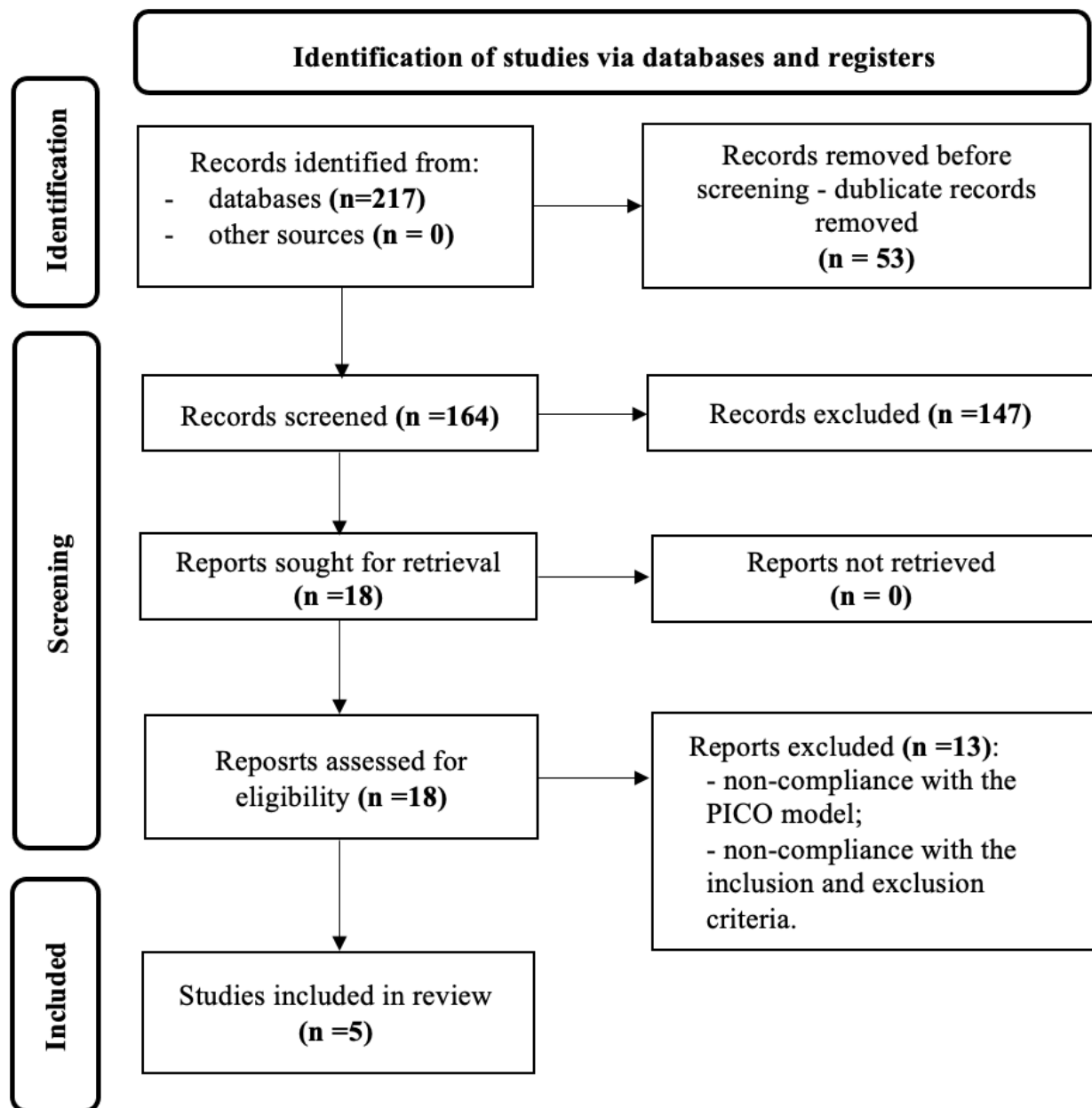


Figure 1 Flow diagram of article selection process (Page et al., 2021).

*Table 1 Summary of included studies*

<b>Authors</b>	<b>1. Yeole et al. (2017)</b>	<b>2. Chaturvedi et al. (2018)</b>	<b>3. Santos et al. (2019)</b>	<b>4. Moraes et al. (2014)</b>	<b>5. Abba et al. (2020)</b>
<b>Study design</b>	Randomised controlled trial	Randomised controlled trial	Randomised clinical trial	Randomised controlled trial	A quasi-experimental clinical study involving a before-after analysis of two groups
<b>Number of participants (intervention group/control group)</b>	Total: 30 Experimental group - 15 Control group -15	Total: 90 Experimental group - 49 Control group -41	Total: 48 (40 analysed) Group 1 - 15 Group 2 - 11 Group 3 - 14	Total: 20 Experimental group - 10 Control group - 10	Total: 30 Group 1 - 15 Group 2 - 15
<b>Average age of participants</b>	58,06 ( ± 8,79) 59,73 ( ± 9,52)	61,30 ( ±13,30) 55,29 ( ± 15,90)	58,20 ( ± 7,70) 55,50 ( ± 9,60) 52,70 ( ± 13,30)	63,00 ( ± 9,16) 61,10 ( ± 5,72)	59.53 ( ± 9.92) 63.00 ( ± 7.27)
<b>Stroke stage</b>	Not mentioned	Acute or subacute (<6 weeks)	Chronic (haemiparesis lasting at least 6 months)	Chronic (more than 14 months)	Chronic
<b>Type of therapy in groups</b>	Experimental group: PNF method Control group: conventional physiotherapy	Experimental group: the PNF method Control group: Traditional exercises	Group 1: PNF method Group 2: VR method Group 3: PNF/VR methods	Experimental group: PNF method Control group: Conventional physiotherapy	Group 1: PNF method Group 2: CIMT method
<b>Evaluation parameters and instruments</b>	Ashford scale; Barthel Index; Upper and lower extremity range of motion	Fugl-Meyer Assessment; AMAT; BDNF	Fugl-Meyer Assessment	Fugl-Meyer Assessment; FIM;	Fugl-Meyer Assessment
<p>PNF - Proprioceptive neuromuscular facilitation; AMAT- Arm Motor Ability Test; BDNF- Serum Brain-Derived Neurotrophic Factor; VR - virtual reality; FIM-Functional Independence Measure; CIMT-Constraint-Induced Movement Therapy.</p>					

At the initial stage of study selection, 217 studies were identified in PubMed, ScienceDirect, EBSCOhost, GoogleScholar, Cochrane Library and Research Gate databases using selected keywords related to the PICO model elements, according to PRISMA 2020 guidelines. After a first filtering of the selected studies, 53 duplicate studies were excluded. For further review of the scientific articles, 164 studies were included, for which title and abstract matching was checked, resulting in 18 studies remaining. Further analysis of the full text of the studies according to the inclusion and exclusion criteria resulted in the exclusion of a further 13 studies. As a result, five publications that met all selection criteria were included in the systematic review and included in further analyses.

### PE德罗 scale assessment of research quality

All full-text studies were assessed to exclude studies of low or average quality. All studies included in the review scored six or more on the PEDro scale.

### Assessment of the effectiveness of the PNF method

Table 2 Mean AMAT score at before and after intervention Chaturvedi et al. (2018) study

Study author, year	Experimental group		Control Group		p - value*
	Before	After	Before	After	
	Arithmetic average				
Chaturvedi et al. (2018)	38,33 (SD±16,04)	92,40 (SD±24,60)	45,60 (SD±19,73)	75,73 (SD±16,40)	0,038
* statistically significant differences between experimental and control groups; SD - standard deviation					

The Arm Motor Ability Test (AMAT), used by Chaturvedi et al. (2018), assesses upper limb functional capacity in people with neurological disorders. Table 2 shows the results of the upper limb motor ability and function assessment before and after the intervention Chaturvedi et al. (2018) study. The analysis of the results showed that the experimental group that was administered the PNF method had a greater difference in mean scores compared to the control group whose participants performed traditional exercises. When comparing the results of the two groups, the change in mean scores of the PNF group participants after the intervention was statistically significant ( $p = 0.038$ ). However, no analysis of the results within each group was performed.

**Table 3 Mean FMA upper limb motor function scores before and after intervention Santos et al. (2019) and Abba et al. (2020) studies**

Study author, year	Group 1			Group 2			p - value*
	Before	After	p - value	Before	After	p - value	
	Arithmetic average						
Santos et al. (2019)	30,8 (SD±23,5)	33,8 (SD±24,7)	0,018	38,91 (SD±23,2)	43,8 (SD±23,7)	0,10	> 0,05
Abba et al. (2020)	34,4 (SD±9,76)	37,1 (SD±9,53)	0,000	36,8 (SD±7,63)	47,3 (SD±7,46)	0,000	0,002

SD - standard deviation; \*statistically significant differences between different intervention groups; group 1 - PNF intervention; group 2 - other therapy

Four out of five studies (Chaturvedi et al., 2018; Santos et al., 2019; Moraes et al., 2014, Abba et al., 2020) assessed upper limb motor function after Fugl-Meyer Assessment (FMA). Only the upper limb motor function score was selected from the four studies, with a maximum of 66 items. Table 3 shows the results of two publications (Santos et al., 2019; Abba et al., 2020) describing upper limb motor function after FMA. The overall result of both studies after the applied PNF intervention shows a statistically significant improvement in the mean scores ( $p < 0.05$ ). In the control group, statistically significant improvements in mean parameters were observed in the study by Abba et al., (2020) ( $p < 0.05$ ). In contrast, comparing the pre-and post-intervention results of the two groups, a statistically significant improvement in mean scores was observed only in participants in the Abba et al., (2020) study.

**Table 4 Mean Ashford scale score before and after the intervention in the Yeole et al., (2017) study**

Study author, year	Experimental group			Control Group			p - value*
	Before	After	p - value	Before	After	p - value	
	Arithmetic average						
Yeole et al., (2017)	2,46 (SD±0,51)	1,13 (SD±0,5)	<0,0001	2,40 (SD±0,50)	1,86 (SD±0,35)	<0,003	<0,0001

SD - standard deviation; \*statistically significant differences between experimental and control groups

Only one of the selected studies (Yeole et al., 2017) assessed participants' spasticity using the Ashford scale before and after treatment. The aim of the scale is to assess the degree of muscular resistance to passive movement in the joint at variable speeds. Table 4 shows the mean scores of the Ashford scale before and after the therapeutic intervention in the experimental and control groups Yeole et al. (2017) study. The data summarised in the table showed a reduction in spasticity in the upper limbs in both groups. The improvements in outcomes were statistically significant in both groups ( $p < 0.0001$ ;  $p < 0.003$ ). When comparing the mean scores of the two groups, participants in the PNF group showed statistically significant improvements compared with those in the control group ( $p < 0.0001$ ).

Functional capacity for self-care was assessed only in Yeole et al. (2017) study using the Barthel Index. Table 5 summarises the average Barthel Index results for Yeole et al. (2017) study. When comparing the two groups' post-intervention scores, the PNF group was statistically significant compared to the control group ( $p = 0.0164$ ). As well, participants in the PNF group showed statistically significant improvements in self-care ability after the intervention ( $p < 0.0001$ ).

*Table 5 Mean Barthel Index score before and after intervention in the study by Yeole et al., (2017)*

Study author, year	Experimental group		Control Group				p - value*
	Before	After	Before	After	Before	After	
	Arithmetic average						
Yeole et al., (2017)	54,33 (SN±7,52)	85 (SN±5)	<0,0001	53 (SN±2,53)	79 (SN±7,6)	<0,0001	0,0164
SD - standard deviation; *statistically significant differences between experimental and control groups							

Changes in upper limb range of motion before and after the intervention were only assessed by Yeole et al. (2017) study. The study summarised the results of active range of motion changes in the shoulder joint in flexion, extension, abduction, internal and external rotation directions, in the elbow joint in flexion, and in the wrist joint in flexion, extension, radial and ulnar deviation directions, which were evaluated with a manual goniometer. There was a statistically significant difference in outcomes between patients in the PNF group compared with those receiving conventional therapy: improved shoulder flexion ( $p = 0.0038$ ), extension ( $p = 0.0468$ ) and abduction ( $p = 0.0001$ ), elbow flexion ( $p = 0.0042$ ) and wrist motion (flexion -  $p = 0.014$ ; extension -  $p = 0.03$ ; radial

deviation -  $p = 0.0382$ ). However, no analysis of the results was performed within each group. A statistically insignificant difference between the experimental and control groups was observed when external and internal rotation of the shoulder and ulnar deviation of the wrist were assessed ( $p > 0.05$ ).

## **Discussion**

This systematic review included five publications that examined and evaluated the effectiveness of PNF in improving upper limb function in patients after stroke. Based on information from the PROSPERO international prospective registry of systematic reviews (National Institute for Health and Care Research), no studies similar or equivalent to this systematic review were identified. All studies included in the review scored six or more on the PEDro scale, indicating high quality studies.

In the systematic review, the total number of study participants was 210 patients, with the lowest number of participants in Moraes et al. (2014) study was 20 patients, and the largest number of participants was Chaturvedi et al. (2018) study -90 patients. The mean age of participants in the included studies ranged from 52 to 63 years. In the study by Santos et al. (2019), Moraes et al. (2014) and Abba et al. (2020) studies, patients were in the chronic stage of stroke, while Chaturvedi et al. (2018) in the acute or subacute stroke stage, but Yeole et al. (2017) study did not mention the stroke stage of the participants.

The authors of the study included in the systematic review, Yeole et al. (2017) had shown that PNF was effective in reducing spasticity, improving upper limb range of motion, and improving functional capacity for self-care. The other authors of the included studies, Santos et al. (2019), Abba et al. (2020), Chaturvedi et al. (2018), and Moraes et al. (2014) similarly demonstrated the statistically significant effect of the PNF method in improving motor abilities and function.

Upper limb motor abilities and function were analysed in four of the five studies using the Arm Motor Ability test and the Fugl-Meyer upper limb assessment. The studies showed statistically significant improvements in upper limb motor ability and function after PNF intervention. The aim of the study by Rai et al. (2015) was to demonstrate the effectiveness of kinesiotaping combined with PNF in improving motor function in patients with shoulder hemiplegia. The control group participants who had only PNF method applied also showed statistically significant results according to the Motor assessment scale ( $p < 0.001$ ). Statistical analysis of the randomised controlled trial by Joshi and Chitra (2017) showed that the experimental group receiving PNF with conventional treatment and the control group receiving conventional treatment alone showed statistically significant improvement in motor function as assessed by the FMA ( $p < 0.05$ ).

Functional capacity for self-care was assessed in only one study (Yeole et al., 2017). The aim of this study was to demonstrate the effectiveness of the PNF method in participants with hemiplegia, both participants in the experimental group to whom the PNF method was applied and in the control group showed statistically significant improvements in Barthel index ( $p < 0.0001$ ). In the study by Borowicz et al. (2022), where the impact of PNF method and mirror therapy on the restoration of functional ability was compared among participants after their first stroke, both "before" and "after" intervention results on the Barthel Index and Rankin Scale showed significant improvements ( $p < 0.001$ ).

Spasticity assessment of the upper limbs was performed in only one study (Yeole et al., 2017) using the Ashford scale. Based on the collected study results, a statistically significant reduction in spasticity was observed in both groups. Comparing the results of the experimental and control groups, a statistically significant difference was found ( $p < 0.0001$ ). The results of Dhar et al. (2021) conducted a study evaluating changes in shoulder pain and spasticity in patients with hemiplegia using PNF techniques and stabilisation exercises; after 90 days, the mean modified Ashford scale score decreased in both groups: from 2.40 to 1.60 in the stabilisation exercise group, but from 2.93 to 1.53 in the PNF group.

Active range of motion assessment of the upper limbs was performed only in the Yeole et al., (2017) study participants using a manual goniometer. For the group of participants to whom the PNF method was applied, statistically significant improvements in mean scores were found in the direction of flexion, extension and abduction of the shoulder joint, flexion of the elbow joint and flexion, extension and radial deviation of the wrist ( $p < 0.05$ ). Joshi and Chitra (2017) in their study involving patients with hemiplegia demonstrated that an experimental group that received PNF combined with conventional treatment had a statistically significant improvement in range of motion in the shoulder joint ( $p < 0.05$ ), including external and internal shoulder rotation. In a study by Rai et al. (2015), another aim of which was to determine the efficacy of kinesiotaping combined with the PNF method in improving shoulder range of motion in patients with hemiplegia of the shoulder, the results of both groups showed a statistically significant improvement ( $p < 0.0001$ ) in range of motion of the affected shoulder joint.

While this study provides valuable insights into the topic at hand, it is important to recognize its limitations, which may have influenced the results obtained. One of the main limitations of this study is the small number of included participants, making it challenging to confidently conclude the effectiveness of the PNF method in improving upper limb functions in post-stroke patients. The studies included in the review of the scientific literature had a wide variety of instruments used, so the comparison of the results of the studies was based only on the results of the FMA. However, the diversity of the study sample was limited by the fact that all included publications were in English only. Also, despite all



included studies scoring above 6 on the PEDro scale, four out of five studies did not use masking of raters, which may affect the objectivity of the results.

Based on the study limitations, recommendations for future research using PNF as an intervention can be made. It is recommended that studies use the same or similar main assessment tools to ensure comparable results and to facilitate data analysis and inference. In addition, the inclusion of a control group in all studies could increase the reliability of the studies and lead to stronger conclusions about the effectiveness of the method.

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# RELATIONSHIP BETWEEN MOTIVATION OF CHILDREN AND YOUTH AND TIME SPENT IN FOOTBALL TRAINING (GRADE 5-9)

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**Abstract.** *The laws and regulations of Latvia on the professional education activity in football training state that as the age of the students increases, the number of contact hours per week that must be spent in football training also increases. Furthermore, scientific literature often mentions that as people age, their motivation to engage in physical activity and sports often decreases. The aim of this study was to determine the relationship between the motivation of children and youth for participation and time spent in football training in different age groups. Within the framework of the study, the opinion of the Ethics Commission of the Latvian Academy of Sport Education was received on the compliance of the survey with ethical norms, as well as the legal representative of each research participant had confirmed their participation in the study with a permission. As part of the study, 167 research participants from one Latvian school were surveyed in the grade groups from 5 to 9. The number of hours the research participants spend in football training sessions per year was determined, as well as their motivation to participate in the training. The results of the study showed that as the age of children and youth increases, they spend more time in football training sessions ( $p \leq 0.001$ ), but their motivation decreases every year ( $p \leq 0.01$ ).*

**Keywords:** *football, motivation of children and youth for participation in football, time spent in football training*

## Introduction

Children and youth need physical activity to ensure a positive impact on their health in the current stage of their lives and also in the future, for instance, to be in good shape, prevent the risk of obesity and the possibility of developing various diseases, as well as reduce stress, improve concentration, increase energy, and improve sleep quality. These are just a few of the positive aspects of an active lifestyle. Physical activities can be any active body movements during which energy consumption is increased compared to the resting state (Centre for Disease Prevention and Control, 2023). Football is mentioned as the most popular sport

both in Latvia and in the world (Dvorak, Junge, Graf-Baumann & Peterson, 2004). Motivation plays a very important role for children and youth to want to engage in physical activity, including football (Miller, Roberts & Ommundsen, 2004). In the Regulations of the Cabinet of Ministers No. 855 “Procedures by which the State Finances Vocational Orientation Sports Education Programmes” (CMRL, 2021), it is stated that as the training group in vocational orientation education institutions ages, the number of contact hours per week increases. It is important to understand whether the time spent in training can significantly affect the motivation of a child to engage in physical activity, more specifically – football. As part of the research, 167 children and youth from Grade 5 to Grade 9 were surveyed. During the survey, it was determined whether the child plays any sport outside of school, and if so, which sport. After that, focusing on children who play football outside of school, it was determined how much time is spent in training, what is the motivation of the child to engage in this sport, and correlations between these indicators were analysed.

The research aim of this study is to determine the relationship between the motivation of children and youth for participation and time spent in football training in different age groups.

### **Motivation Characteristics of Children and Youth in Football Training**

Physical activities are necessary for children and youth to be able to develop comprehensively (Centre for Disease Prevention and Control, 2023). The study (Caspersen, Powell & Christenson, 1985) explores how physical activity is related to all activities performed by the body, which are carried out with the participation of human muscles, and which consume human energy. Physical activity is any movement, but usually this concept is applied to sports activities (Bouchard, Blair & Haskell, 2012) or physical activities are seen as active movements of the body, during which energy consumption is increased compared to a state of rest (Hardman & Stensel, 2009). One form of physical activity is sports games, for example, football.

Football is the most popular sport both in Latvia and around the world. This sports game is available to everyone (Dvorak, 2004). This type of sport also plays an important role in Latvia, as there has been a significant increase in the number of young footballers in recent years, as well as coaches and clubs, which means that every year the football family is numerically getting bigger (Latvian Football Federation, 2018).

Moreover, other studies (Dvorak et al., 2004) also mention that football is recognized as one of the world’s favourite sports, during which dynamic play, skills and a competitive spirit are displayed. However, despite all the positive things associated with football, it is important to realize that motivation plays a very important role in children and youth football (Miller, Roberts &

Ommundsen, 2004). Motivation serves as an incentive to have the desire to engage in the training process and to continuously face new challenges (Cresswell, Rogers, Halvorsen & Bonfield, 2019). This means that motivation can change under the influence of various factors, which accordingly affect both engagement during training and effort (Ryan & Deci, 2017). The study by Rodrigues et al. (2023) assessed changes in motivation in 108 football players (average age 14) during a season. Three reference points were set: 2 weeks before the season, mid-season, and at the end of the season. It was concluded that there is a significant decrease in motivation between the beginning of the season and the end of the season. The study noted that it is important to consider the motivation of children and youth to better understand their engagement in football training. The study by Stults-Kolehmainen, Ciccolo, Bartholomew, Seifert & Portman (2013) also confirmed that motivation is very important during physical activity, but the results showed that engagement in physical activity decreases with increasing age group.

The number of hours in football training groups is defined in the regulatory acts that regulate the operation of vocational orientation education - the Regulations of the Cabinet of Ministers No. 855 “Procedures by which the State Finances Vocational Orientation Sports Education Programmes” (CMRL, 2021). This regulatory act stipulates that as a person gets older (is included in a higher training group), the time spent in football training increases.

*Table 1 Number of Hours in Football Training Groups*

No	Group Qualification*	Number of Contact Hours per Week	Participation in Competitions from the Number of Hours per Week
1.	SSG	6	-
2.	MT-1	8	-
3.	MT-2	9	up to 3*
4.	MT-3	11	up to 3
5.	MT-4	13	up to 3
6.	MT-5	15	up to 5
7.	MT-6	17	up to 6
8.	MT-7	19	up to 6
9.	SMP-1	20	up to 7
10.	SMP-2	20	up to 7
11.	SMP-3	21	up to 8
12.	ASM	23	up to 8

\*

SSG – initial preparation group.

MT-1 – group of the first year of training.

MT-2 – group of the second year of training.

MT-3 – group of the third year of training.

MT-4 – group of the fourth year of training.

MT-5 – group of the fifth year of training.

MT-6 – group of the sixth year of training.

MT-7 – group of the seventh year of training.

SMP-1 – group of the first year of improving sportsmanship.

SMP-2 – group of the second year of improving sportsmanship.

SMP-3 – group of the third year of improving sportsmanship.

ASM – group of the highest sportsmanship.

In the initial preparation group, the number of contact hours is set to 6 contact hours per week. In astronomical time, it is 240 minutes or ~ 34 minutes per day. In the MT-1 group, it is set to 8 contact hours per week, which is 320 astronomical minutes per week or ~ 46 minutes per day. In the MT-2 group, it is set to 9 contact hours per week, which is 360 astronomical minutes or ~ 51 minutes per day. In the MT-3 group, it is set to 11 contact hours per week, which is 440 astronomical minutes or ~ 63 minutes per day. Therefore, the time recommended by the CDCP centre that a person should devote to physical activities per day is fulfilled only starting with the MT-3 group. In the MT-4 group, it is set to 13 contact hours per week, which is 520 astronomical minutes or ~ 74 minutes per day. In the MT-5 group, it is set to 15 contact hours per week, which is 600 astronomical minutes or ~ 86 minutes per day. In the MT-6 group, it is set to 17 contact hours per week, which is 680 astronomical minutes or ~ 97 minutes per day. In the MT-7 group, it is set to 19 contact hours per week, which is 760 astronomical minutes or ~ 109 minutes per day. In both the SMP-1 and the SMP-2 group, it is set to 20 contact hours per week, which is 800 astronomical minutes or ~ 114 minutes per day. In the SMP-3 group, it is set to 21 contact hours per week, which is 840 astronomical minutes or ~ 120 minutes per day. In the ASM group, it is set to 23 contact hours per week, which is 920 astronomical minutes or ~ 131 minutes per day.

Considering that in vocational orientation education institutions, as the qualification of the group increases, the time spent in training also increases, a question arises – could this lead to a decrease in motivation and the termination of the training processes?

## **Methodology**

In order to investigate the nature of participation in sports, football and the subject of physical education at school, a survey was conducted. The questions of the survey conducted as part of the research were theoretically justified. The first four questions of the survey were demographic; therefore, they have no theoretical basis. For the theoretical basis of the survey, see Table 2.

In total, the survey consisted of 19 questions, but the answers to questions No. 1, 2, 3, 4 and 5 were not used as part of this publication. An opinion was received for the survey from the Ethics Commission of the Latvian Academy of Sport Education, which confirmed that the content of the survey complies with ethical norms. Consent was obtained from a parent of each survey participant, in which the parent confirmed the participation of their child in the survey. The research participants completed the survey electronically with the help of the Google Forms survey tool. Survey participants completed the surveys during computer classes. A total of 167 participants participated in the study. The survey took place in 2022, from November 21 to November 25.

Taking into account that the research participants who play football are students of a vocational orientation education institution (football (Educational programme code 20V 813001)), permission was received from the vocational education institution that the attendance of the research participants who are engaged in football training during the study year 2021/2022 will be examined, using the database available in e-class. Based on these data, it was possible to determine how many hours each research participant who is involved in football spent in football training during the year.

Table 2 *Theoretical Framework of the Survey Content*

Question No./ Theoretical Basis	Vossoughi & Bevan, 2014	Morgan et al., 2005	Audas & Willms, 2002	Willms, 2003	Cope et al., 2013	Gulbe, 2010	MoES, 2014	Robazza et al., 2004
1.								
2.								
3.								
4.								
5.	x							x
6.	x							
7.	x							
8.			x	x				
9.		x						
10.		x						
11.	x							
12.					x			
13.						x		
14.							x	
15.	x							x
16.	x							
17.		x						
18.		x						
19.	x							

The research sample consisted of 167 children and youth, who studied in Grades 4-8 in 2022. Out of all study participants, 23 study participants attend football training, 80 participants attend other sports training, and 64 study participants do not attend sports training outside of school.

Mathematical statistics was used to investigate the correlations and reliability in children and youth at different age stages between the time spent in football and their motivation.

Using the data processing programme Microsoft Excel, the information/data obtained during the survey and document analysis was compiled. These data were entered into the SPSS (Statistical Package for the Social Sciences) programme, where the answers were calculated in percentages, the Kruskal-Wallis H-test

criterion test and the statistical error probability was determined, and the Spearman's rank correlation coefficients were calculated.

The significance of the difference between the indicators has been evaluated with 5% and 1% probability of statistical error, thus, if the p-value in the test results was less than or equal to 0.05, then the results were considered statistically significant. During the Kruskal-Wallis H-test if the value of statistical significance (Asymp. Sig. - p) is less than 0.05, then there is a statistically significant difference between the analysed grades in relation to the studied variable. Taking into account that the research data were non-parametric, the Spearman's rank correlation method was used in the correlation analysis, which determines that if the indicators is in the range of 0.0 to 0.4, the correlation coefficient indicates weak, insignificant correlations; 0.4-0.7 correlations can be considered as moderately close, but the correlations are considered close only when  $r=0.8-0.9$  (Kraštinš, 1998).

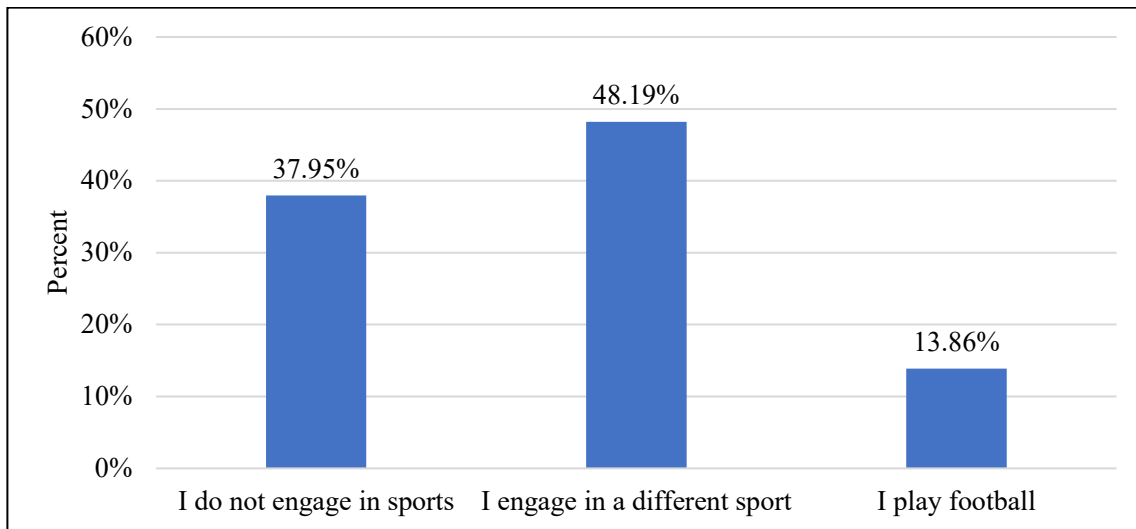
At the beginning of the study, the author of the paper collected the information available in the literature about the characteristics of the motivation of children and youth during football training. By performing this task, a theoretical understanding of the researched topic was obtained. By studying how much time children and youth spend in football training during the school year and their motivation, mutually comparable data were obtained, then these data were mutually analysed, and conclusions were drawn.

## **Research results**

A total of 167 children and youth participated in the study, of which 41 research participants (24.6%) studied in Grade 5, 27 students (16.2%) studied in Grade 6, 40 research participants (24.0%) were students of Grade 7, 38 research participants (22.8%) studied in Grade 8, while 21 research participants (12.6%) studied in Grade 9.

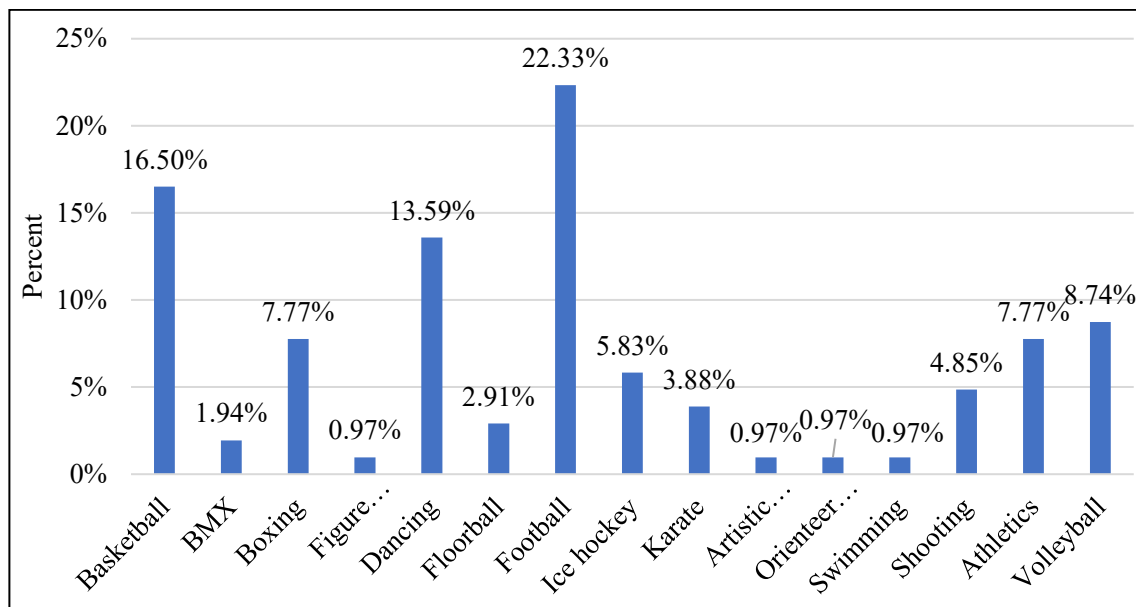
In order to understand how many of the research participants are engaged in some type of sports, the question "Do you engage in sports (apart from school)?" was put forward (see Fig. 1). Out of all 167 research participants, the majority (62.05%) noted that they play some kind of sport outside of school, of which 48.19% noted that it is a different sport, while 13.86% stated that they attend football training outside of school (see Fig. 1).





*Figure 1 Answers of Research Participants to the Question  
 “Do you engage in sports (apart from school)?”*

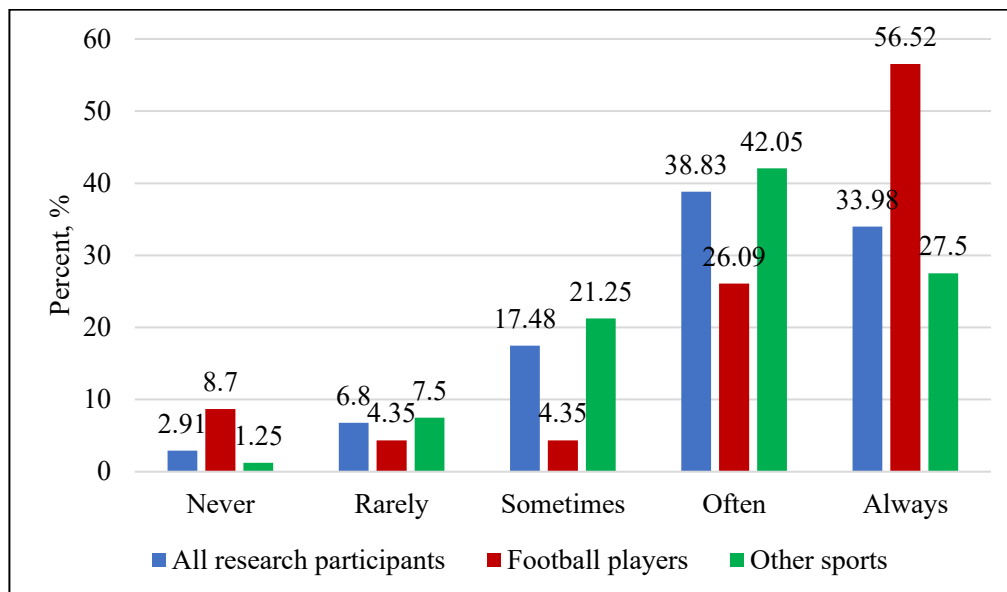
In order to understand which sports are the most popular among students, the question “What kind of sport are you engaged in?” was put forward (see Fig. 2).



*Figure 2 Answers of Research Participants to the Question  
 “What kind of sport are you engaged in?”*

Looking at Figure 2, it can be observed that out of 62.05 % or 104 students, who engage in sports outside of school, the majority or 22.33 % play football. The next most attended sport is basketball, followed by dancing.

In order to be able to assess the motivation of the research participants, they were asked to mark how often they feel motivated during training (see Figure 3).



**Figure 3** *Answers of Research Participants to the Question “Please mark how often you feel motivated during training”*

Among all study participants who do sports training outside of school, the answer “Often” was chosen most often (38.83%), the answer “Always” was chosen by 33.98% of the research participants, while 17.48% of children and youth selected the answer “Sometimes”, 6.80% of the study participants selected the answer “Rarely”, and only 2.91% stated that they never feel motivated during training. Among the research participants who attend football training outside of school, the most frequently chosen answer was “Always” (56.52%), the answer option “Often” was selected by 26.09% of football players, 8.70% of football players chose the answer “Never”, and the answer options “Rarely” and “Sometimes” were selected by 4.35% of football players. Representatives of other sports most often chose the answer option “Often” (42.50%), while the answer option “Always” was chosen by 27.50%, the answer “Sometimes” was selected by 21.25% of children and youth, the answer option “Rarely” was chosen by 7.50% of the representatives of other sports, while the answer option “Never” was selected by only 1.25% of the research participants, who engage in another sport in their free time. According to these results, it can be concluded that more than half (56.52%) of the research participants who play football feel motivated during the training, which is a higher rate compared to the rest of the study participants.

Taking into account the fact that every research participant who plays football is a student of a vocational orientation educational institution and, in order to determine how many hours per year the research participants spend in football training, the data available in the e-class on the training attendance of students were analysed (see Fig.4).

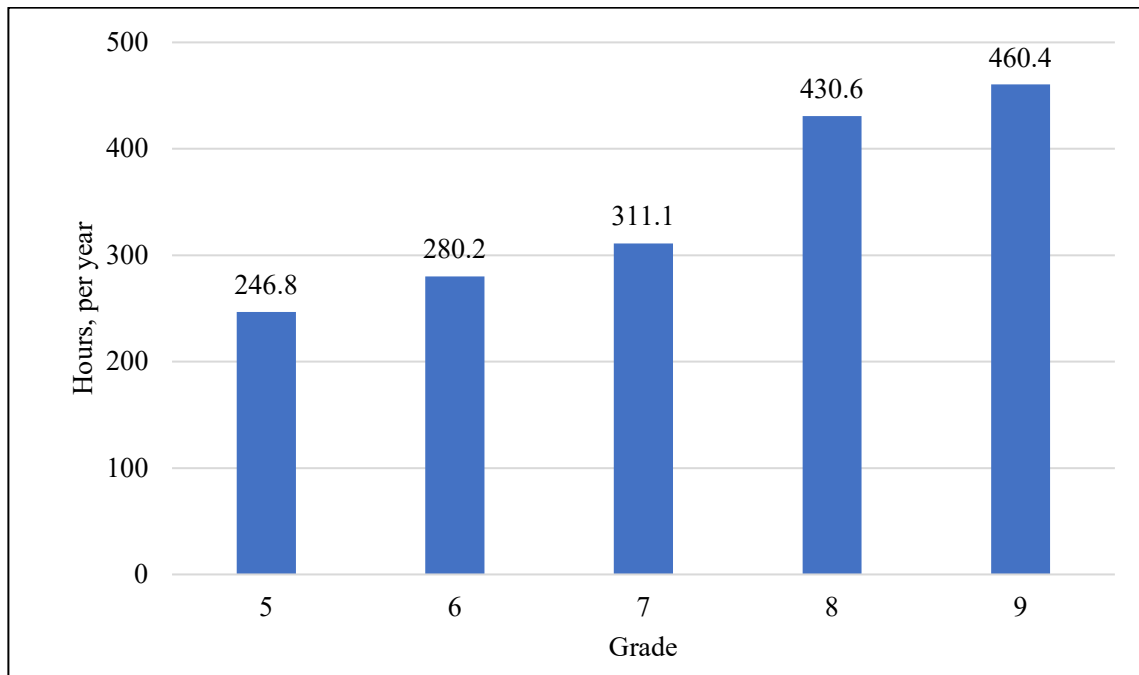


Figure 4 “Average hours spent in football training per year?”

According to the data obtained, the average number of hours spent in football training in classes and the Kruskal-Wallis H-test criterion was determined, which determines whether there is a statistically significant difference between the time spent in football training and their age in children and youth.

The Kruskal-Wallis H-test criterion test showed that there were statistically significant differences between the time spent in football training by children and youth and their age ( $\chi^2=19.243$ ,  $p\leq 0.001$ ).

Research participants of Grade 6 spent an average of 33.4 hours more in football practice than students of Grade 5. Students of Grade 7 spend an average of 30.9 hours more in football training than students of Grade 6. The largest within-year difference is between research participants of Grade 7 and Grade 8. In Grade 8, the average study participant spent 199.5 hours more in football training than the student of Grade 7, while students of Grade 9 spent an average of 29.8 hours more in football training than research participants of Grade 8. According to these data, it can be observed that the higher the grade of the research participant, the more hours the person spends in football training on average (see Fig. 3). These data could indicate that as the study participants get older, there is less time during the day for other activities, which could contribute to the lack of motivation to attend training sessions. However, in order to assess whether there is a correlation between these factors, the motivation of children and youth to attend training sessions was determined.

**Table 3 Spearman's Rank Correlation Analysis for Motivation During Training According to Hours Spent in Football Training or Grades**

	Motivation During Training
Hours spent in football training per year	-.356*
Age of football players	-.490**
**. Correlation is significant at the 0.01 level	
*. Correlation is significant at the 0.05 level	

A negative, weak, statistically significant correlation ( $r_s = -.356$ ,  $p \leq 0.05$ ) was observed between the hours spent in football training during the school year, and how often the study participants feel motivated during football training. This result suggests that the more time children and youth spend in football training, the less motivated they feel. Taking into account that a close, statistically significant correlation was also determined between the time spent in football training during the school year and the grade in which they study ( $r_s = .914$ ,  $P \leq 0.01$ ), the results may indicate that the higher the grade of the child or youth, the less motivated they feel to train. This was further verified by conducting Spearman's rank correlation analysis for motivation during training and the grade in which the child studies. A negative, moderately close, statistically significant correlation ( $r_s = -.490$ ,  $p \leq 0.01$ ) was shown between the grade of the research participants who play football, study and how often they feel motivated during football training. This result indicates that the older the study participant becomes, the less motivated the participant is during football training. This is probably related to the fact that as the research participants get older, they develop other interests and the belief that they will succeed in becoming a professional athlete decreases.

### **Conclusions and discussion**

The results highlighted:

1. As part of the study, it was concluded that more than half (56.52%) of the research participants who played football feel motivated during training.
2. The Kruskal-Wallis H-test criterion test showed that there were statistically significant differences between the time spent by children and youth in football practice and the grade in which the child and youth is studying ( $\chi^2 = 19.243$ ,  $p \leq 0.001$ ). Among the research participants, children and youth of Grade 5 spent an average of 246.8 hours in football training during the school year, while children and youth of Grade 6 spent an average of 280.2 hours in football training, students of Grade 7 spent 311.1 hours, research participants of Grade 8 spent an average of 430.6 hours in football training, while study participants of Grade 9 – 460.4 hours. These data show that the

higher the grade of the study participant, the more hours the participant spends in football training on average per year.

3. The more hours a football player spends in training, the less motivated the person feels during training ( $r_s = -.356$ ,  $p \leq 0.05$ ). Furthermore, the older the research participant who plays football, the less motivated the person is during training ( $r_s = -.490$ ,  $p \leq 0.01$ ).

These study results are in line with previous research about players' inherent enjoyment and interest in football declined (Miller et al., 2004; Cresswell et al., 2019; Rodrigues et al., 2023). The high frequency of football training, regardless of workload, presents challenges in providing athletes adequate motivation. We recommend that future studies focus on investigation of psychological skills training content and its potential motivational effect.

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# DOLPHIN ASSISTED THERAPY: WELFARE OF BOTH PATIENTS WITH DEPRESSION AND PARTICIPATING DOLPHINS

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**Abstract.** *The main aim of this research was to measure the effect of dolphin assisted therapy on both patients and participating dolphins. The research measured welfare of patients with depression and situational welfare of dolphins which participated in the dolphin assisted therapy programme. Patients with organic depression took part in two-week dolphin assisted therapy sessions. When measuring situational welfare of dolphins, the study sample consisted of nine individual dolphins (*Tursiops truncatus ponticus*, Lat.): three males and six females ranging from five to twenty years. The main research results revealed that psychosocial characteristics of patients with organic depression disorder as well as patients' self-evaluation changed statistically significantly, the symptoms of depression decreased. The research revealed that patients were much more physically active during the period of participation in the dolphin assisted therapy process than before. The analysis of dolphin behaviour brought to the light that most of the therapy time dolphins behaved positively. There were noticed no therapy sessions where the dolphin behaviour would be evaluated as more negative than positive or just negative.*

**Keywords:** *dolphin assisted therapy, depression, welfare.*

## Introduction

Depression is reported as the largest health concern in the 21st century (World Health Organisation [WHO], 2013). The somatic symptoms of mental disorders are various sensations or one's body pain imitating pathology of particular organs or organ systems and quite often causing disability (Grover, Sahoo, Chakrabarti, & Avasthi, 2019; Savicius, 2021). Such patients usually complain about appetite and weight loss, overall weakness, sleep disorders, various kinds of pain (Miller & Campo, 2021). Organic depression can occur in the presence of an unrelated medical disorder or mimic a recognised disorder, represent a true symptom of an underlying medical disorder. However, diagnosis of organic depression is complicated by the fact that patients have a high incidence

of somatic symptoms, such as weakness, headache, dizziness, distress and abdominal discomfort (Dietch & Zetin, 1983; American Psychiatric Association [APA], 2019). Patients use to search for alternative pathways to help themselves instead or in addition to drug treatment. People suffering from depression usually search for additional or complementary methods to help, as other studies show that treatment provided by complementary and alternative medicine (CAM) might be a substitute for conventional care, particularly in patients with moderate disease (Hansen & Kristoffersen, 2016). The holistic dolphin assisted therapy (DAT) tends to be one of such methods. However, during the last decade, welfare of animals being kept under care of people is given much attention; so the dolphin welfare science is rapidly developing (Delfour, Vaicekauskaite, & García-Párraga, 2021; Delfour et al., 2020; Brando, Broom, Acasuso-Rivero, & Clark, 2017) and, therefore, it is relevant to investigate not only the therapeutic effect on people suffering from depression, but also on participating animals. Some research works evaluate DAT negatively in terms of dolphin welfare. Such research is often conducted on the overview basis aiming to reject and criticise any research on dolphin therapy. The criticism is based on the view that a contact with a human disturbs natural behaviour of dolphins, causes stress, a human can infect a dolphin with various diseases (McDonald, Pace, Blue, & Schwartz, 2012; Brakes & Williamson, 2007; Williamson, 2008; Marino & Lilienfeld, 2007; Marino & Lilienfeld, 1998); however, there exist a lack of studies which would prove these aspects. Therefore, multidisciplinary research is necessary to answer this criticism. For this reason, parameters of both people and dolphins participating in the therapy were measured when investigating welfare.

The so-called “welfare pyramid” which attempts to condense the most important biological components of animal welfare was chosen as the basis for the dolphin welfare research. The basic animal welfare aspects are: physiological needs, veterinary care and safety. The top segments deal with advanced needs, or “wants”, i.e. a possibility for an animal to choose. However, reaching the higher animal welfare needs can be challenging. On the one hand, it may have no obvious financial or other benefits, but, on the other hand, animal chooses for itself when its other and more fundamental requirements have been met (Mellor, Hunt & Gusset, 2015). Therefore, animals’ choice research is very important in the science of animal welfare.

To make a choice, animals need to prioritise their behaviour and decide which actions to perform. Animals’ decisions depend on internal and external stimuli, the emotions that they elicit, motivation, behavioural goals, valuation, decision-making and its modulation by mood, the assessment of behavioural outcomes, memories (Gygax, 2017; Crystal, 2016; Mendl & Paul, 2004). It is important to note that initiating and interacting with the person which was chosen by the animal can be reinforced without a need for a food reward (Brando et al., 2018). For these reasons, it is necessary to study not only the benefits of DAT,



but also the impact of DAT separately from dolphin's welfare and choice, including both the observed changes in children and the situational well-being of dolphins involved in therapy.

Therefore, the research aim was to investigate the effect of dolphin assisted therapy on both patients with organic depression and participating dolphins. To investigate the influence of dolphin assisted therapy on physical and psychosocial rehabilitation, several scales were used: HAD scale, SF-36, Chandler's Psychosocial Session Form. For the assessment of the situational welfare, the dolphin behaviour was analysed as the indicator. To determine the behavioural changes over time, according to the time interval, the therapy session was divided into three parts (Part 1: 0 to 10 minutes; Part 2: 10 to 20 minutes; Part 3: 20 to 30 minutes); at each interval, the animal's behaviour was re-evaluated.

### **Materials and Methods**

14 patients diagnosed with organic depression classified as an organic and symptomatic mental disorder (F00-F09 according to TLK-10-AM systematic list of diseases), including 12 women and 2 men (Table 1), took part in the empirical research. The average age of the surveyed was 43 (MIN=22 MAX=61). The aim of this research was to analyse the changes in welfare of adult patients with depression when measuring before and after the dolphin assisted therapy. For a period of 10 days, the patients participated in 30-minute DAT every day and one additional 30-minute movement exercise programme. After 5 days, a 2-day break was made.

*Table 1 Demographic characteristics of research participants*

<b>Gender</b>	<b>Age (years)</b>	<b>Age when depression diagnosis was set</b>
Woman	45	18
Woman	47	40
Woman	31	20
Man	40	34
Woman	26	12
Man	22	15
Woman	48	25
Woman	51	51
Woman	58	40
Woman	33	22
Woman	61	40
Woman	43	36
Woman	42	29
Woman	55	46

*Source: Demographic characteristics of research participants. n=14*

To investigate the welfare of the patients participating in the DAT physical and psychosocial rehabilitation, several scales were used. The hospital anxiety and depression scale (HADS) (Zigmond & Snaith, 1983) was used to detect states of depression (HAD-D) and anxiety (HAD-A) of the research participants before and after the course of the dolphin assisted therapy. Cronbach's alpha for HADS-A was 0.86 and for HADS-D was 0.82. To score the HADS, the scales were standardised with a scoring algorithm to obtain a score ranging from 0 to 21. Lower scores indicate better health status: 0–7 = Normal, 8–10 = Borderline abnormal (borderline case), and 11–21 = Abnormal (case). The SF-36 questionnaire was used to reveal health concepts before and after the course of the dolphin assisted therapy from the patient's perspective. The SF-36 is a multipurpose, short-form health survey with only 36 questions. It yields an eight-scale profile of scores, including behavioural function and dysfunction, distress and well-being, objective reports and subjective ratings and both favourable and unfavourable self-evaluations of general health status as well as physical and mental health summary measures (Ware, 2000). To score the SF-36, the scales were standardised with a scoring algorithm to obtain a score ranging from 0 to 100. Higher scores indicate better health status, and a mean score of 50 has been articulated as a normative value for all scales. Chandler's Psychosocial Session Form (PSF) (2005) was used to effectively measure the change occurring as a result of DAT and to determine human behaviours of two types: positive social behaviours and negative social behaviours. The test is designed to be completed at the end of the therapy session. In this research, the form was filled in after the first, third and sixth therapy sessions. It is a method for tracking client's social behaviour change across treatment sessions. The intensity of one's behaviour present during sessions was rated on a Likert-type scale: 0 (none), 1 (very low), 2 (low), 3 (medium), 4 (high) and 5 (very high) (Chandler, 2011). Mean, std. deviation, significance level (p-value of 0.05 or lower was considered statistically significant), and Cohen's d effect size was calculated to reveal the difference of physical and mental state before and after the therapy.

Measuring situational welfare of dolphins, the study sample consisted of 9 individual dolphins (*Tursiops truncatus ponticus*): 3 males and 6 females, their age ranging from 5 to > 20 years. When conducting the research, the following conditions were observed: 1. The dolphin participates in therapy sessions no more than 2 times a day; 2. The dolphin participates in no more than 10 therapy sessions with one client; 3. After 10 consecutive sessions, the dolphin does not participate in therapy sessions for 14 days; 4. When a dolphin participates in dolphin assisted therapy, it does not participate in other activities. For the assessment of the situational welfare, the dolphin behaviour was analysed as the indicator. To determine the behavioural changes over time, according to the time interval, the therapy session is divided into three parts (Part 1: 0 to 10 minutes; Part 2: 10 to 20 minutes; Part 3: 20 to 30 minutes); in each interval, the animal's behaviour was

re-evaluated. In the analysis of the footage, the frequency of the behavioural units was first estimated. The results of the analysis are marked in a questionnaire in which the behavioural patterns are classified into positive and negative. The frequency of behaviour was rated on a scale of 1 to 4, where 1 – never; 2 – rarely; 3 – often; 4 – always, 0 – the action, task not requested. The values of the evaluation scale of negative behaviour patterns were 1 or 4, where 1 – negative behaviour occurred; 4 – no negative behaviour (Table 2). A behaviour unit was created for description of each behaviour pattern.

*Table 2 Description of patterns of dolphins in therapeutic process*

<b>Behaviour pattern</b>	<b>Description of the behaviour pattern</b>	<b>Behaviour unit</b>
Approach to the client	Targeted movement towards the client. Dolphin's body is in horizontal position (dorsal fin up).	Slow, calm
		Swims up immediately, does not avoid contact
		Returning to the therapeutic pool after active commands, maintains a safe distance from therapy participants
Floating position	Local suspending on the water surface. Dolphin's body in a horizontal position (dorsal or pectoral fins upwards).	The dolphin is calm
		Does not avoid a contact
Floating of a client	The movement of a dolphin and a client on the surface of the water when the client is holding onto the dolphin's back or chest fins. The dolphin's body is in a horizontal position (dorsal or pectoral fins upwards).	Willingly floats a client
		Does not avoid a contact
Reaction to a given task	Dolphin's reaction to a gesture / command shown by therapy participants.	Performs passive tasks willingly
		Performs active tasks willingly
Contact with environmental enrichment	Any relation (body, fins, rostrum, mouth) with the means of enriching the environment (by touching, mouthing up).	Actively reacts to a thrown ball
		Actively reacts to the thrown ring
		Does not avoid contact with other environmental enrichment means
Demonstration of aggressive mood	Signs of dolphin's aggressive mood	The flow of air bubbles under water
		Strong jawbone clap
		Slapping the tail to the surface of the water
		Sudden nodding of the head
Aggressive behaviour	A destructive form of dolphin's behaviour directed against another animal or human.	Sudden mouth opening
		The approach is accompanied by a bite
		Hitting another animal with a tail
The freedom of choice	The choice of a dolphin to participate in a therapy session or engage in another activity.	Hitting therapy participants with a tail
		Does not leave the therapy pool for the entire scheduled time of the session, engages in session activities

Source: Description of patterns of dolphins in therapeutic process. n=21 units, 33 sessions

After assessing each behaviour unit, averages were derived at the behavioural model and time plane levels. Each mean was equated to a general behavioural evaluation scale. This principle describes the general behaviour of the animal both in the individual parts of the therapy session and throughout the session. The values of the general behaviour evaluation scale varied from 1 to 4, where 1 – negative behaviour; 2 – more negative than positive behaviour; 3 – more positive than negative behaviour; 4 – positive behaviour. If the overall behaviour of the animal was assessed as “positive”, the units of positive behaviour occurred more often than negative during the study (mean value of the indicator > 3.5); if the overall behaviour was described as “negative”, the units of negative behaviour were more frequent than positive (mean value of the indicator < 1.5)

The behaviour of dolphins was recorded using video cameras only during the sessions. In order to determine whether the behaviour of the dolphin in the therapy session changes tendentiously, the data of the first, fourth, seventh and tenth therapy sessions with the same client were used for the analysis. It includes 33 sessions, 16 hours and 30 minutes of visual material. The data was processed using the Statgraphics Centurion 18-X64 statistical program applying Shapiro-Wilk criteria, quantile comparison diagram and Kruskal–Wallis test. The research design is depicted in Figure 1.

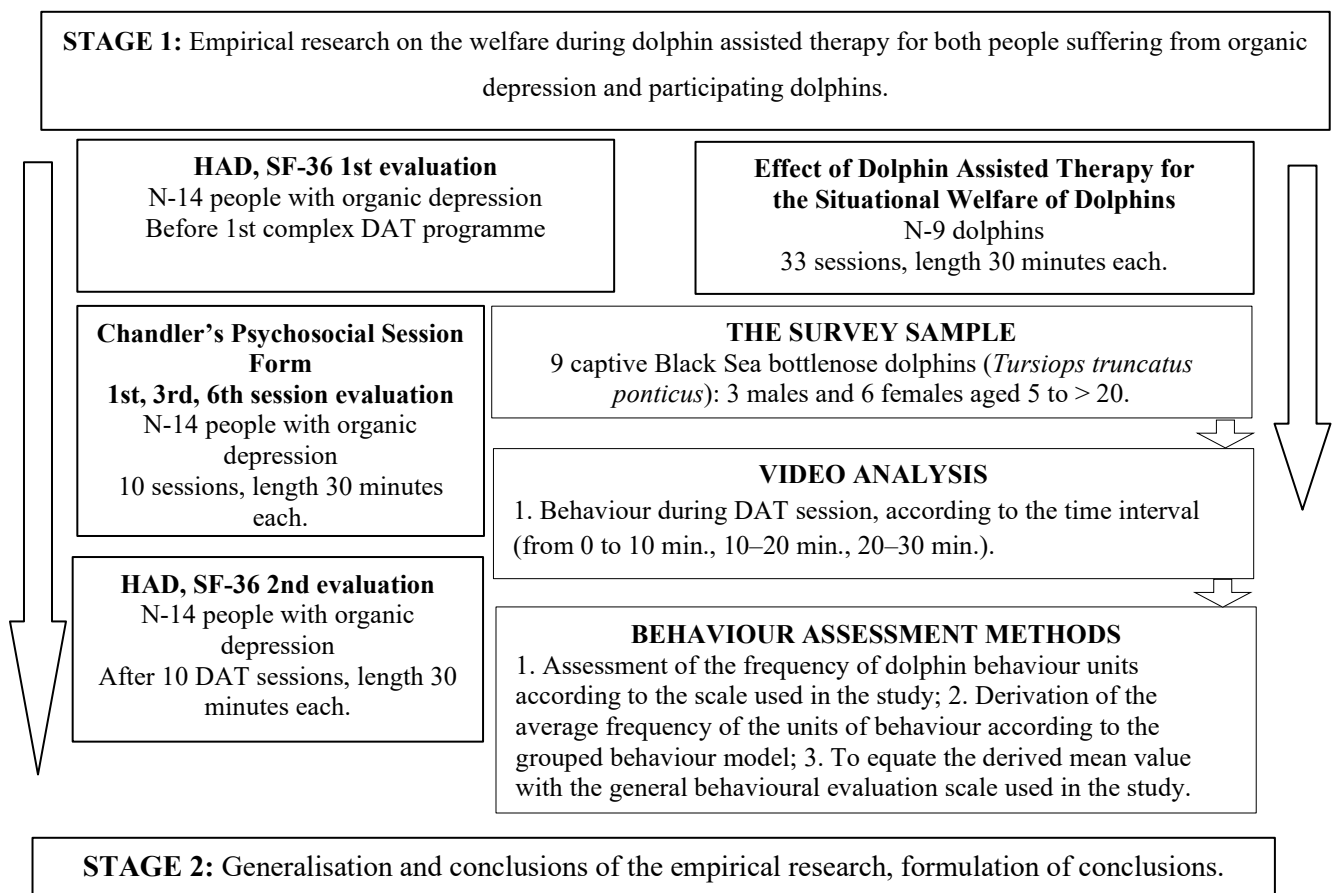


Figure 1 Research design

## Research Results: Subjective Welfare of Dolphins Participating in the DAT Process

Grounding on the behaviour evaluation scale applied in the research, dolphins' behaviour was described as positive in thirty-one dolphin assisted therapy sessions, as more positive than negative in two DAT sessions. There were no sessions with dolphins' behaviour evaluated as more negative than positive or fully negative. Overall, dolphins' behaviour was analysed and evaluated in thirty-three DAT sessions (Figure 2).

In the study, an important task related to dolphins' welfare was to determine whether the dolphin behaviour tends to change over time during one therapy session. Therefore, the therapy session was divided into three parts according to the time interval and the dolphin's behaviour was re-evaluated in each part of the session.

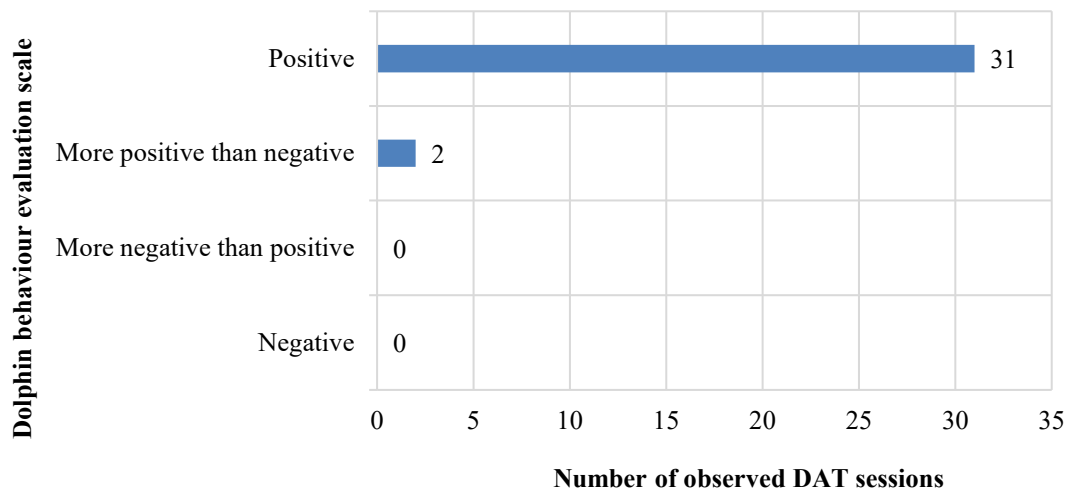


Figure 2 *Dolphin behaviour evaluation scale during the research*

When carrying out statistical analysis of the data on behaviour, the normality probability plot was tested by Shapiro–Wilk criterion and quantile comparison diagram. As the normality probability plot was not satisfied, a median of samples, but not a mean, was analysed. After the analysis of the footage, according to the dolphin behaviour evaluation scale used in the study, the median values of the indicators changed as follows: Part 1: 3.833 ( $n = 33$ ), Part 2: 3.857 ( $n = 33$ ), Part 3: 3.857 ( $n = 33$ ), using the scale where 1 is negative behaviour; 2 – more negative than positive behaviour; 3 – more positive than negative behaviour; 4 – positive behaviour. The defined behaviour values describe the behaviour of dolphins during the therapy session as positive. After processing the data by statistical methods (Kruskal–Wallis test), it was found that there was no statistically significant difference between the medians of these values ( $p > 0.05$ ) (Table 3).

**Table 3 The median of assessed behavioural values during different parts of therapy session**

Part of a therapy session	N	Median of assessed behavioural values	Kruskal–Wallis test to compare medians	
			Kruskal–Wallis test	p
1st part (0–10 min.)	33	3.833	1.688	0,429
2nd part (10–20 min.)	33	3.857		
3rd part (20–30 min.)	33	3.857		

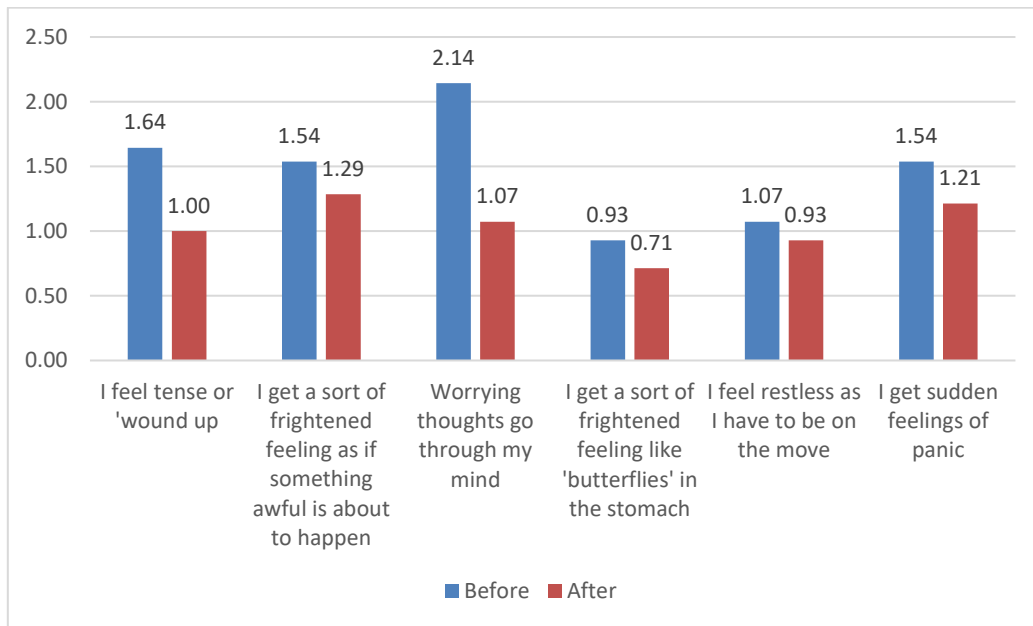
Source: The median of assessed behavioural values during different parts of therapy session. n=33

Such results (Figure 2, Table 3) suggest that under the conditions when dolphins participate in therapy sessions, their behaviour changes slightly over time and remains positive.

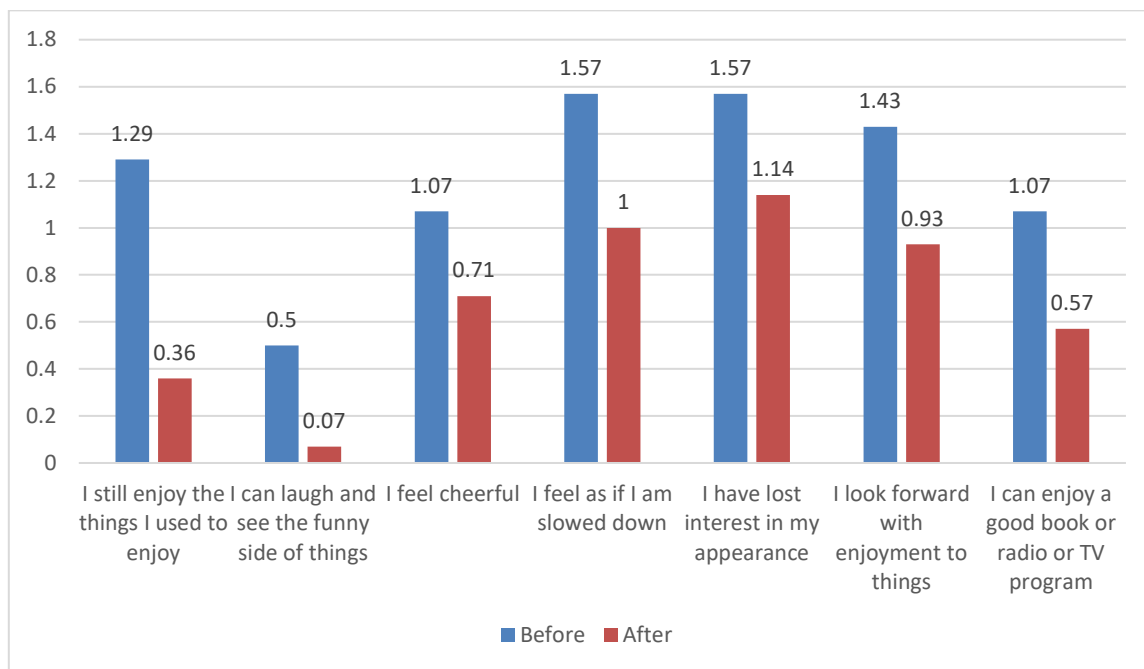
Behaviour is a reflection of mental and physical state, and the better the behaviour of a given species is studied, the easier it is to make judgements about the needs and health of the animal (Reisner & Shofer, 2008). Unfortunately, no similar studies investigating dolphin behaviour in DAT sessions have been found in the literature, therefore the results can not be compared with those of other researchers. However, Trone & Kuczaj (2005) investigated the behaviour of dolphins participating in dolphin-human recreational swimming programmes. The researchers also assessed the frequency of certain dolphin behaviour and found that the interactions were not harmful to the participating dolphins.

### **Research Results: Welfare of Patients Suffering from Organic Depression**

The research results of measuring patients’ anxiety and depression before the DAT sessions and after them revealed that the therapy sessions were effective, and decrease of the said symptoms was measured. The results reveal the decreased level of anxiety, especially decreased feeling of tense and wound up (Cohen’s  $d=1.08$ ;  $p=0.004$ ), worrying thoughts (Cohen’s  $d=1.27$ ;  $p=0.001$ ) and feelings of panic (Cohen’s  $d=0.41$ ;  $p=0.048$ ) (Figure 1). The total score for the anxiety scale before the dolphin assisted therapy was 8.86, meaning “Borderline abnormal”; and after the therapy it was 6.21, meaning “Normal”.



*Figure 3 Anxiety (HAD-A) before and after the dolphin assisted therapy session*



*Figure 4 Depression (HAD-D) before and after the dolphin assisted therapy session*

Depression decreased in all cases, especially enjoyment of things (Cohen’s  $d= 1.06$ ;  $p=0.005$ ), possibility to laugh and see a funny side of things (Cohen’s  $d=0.86$ ;  $p=0.016$ ) and enjoying a book, radio or TV programme (Cohen’s  $d=0.73$ ;  $p=0.033$ ) (Figure 2). The total score for the anxiety scale before the DAT was 8.5, meaning “Borderline abnormal”; and after the therapy it was 4.78, meaning “Normal”. There is a lack of scientific research in dolphin assisted therapy impact for people with depression. However, the research results could be supported by

early study of Birch (1998) revealed that in general sonar emitted by dolphin echolocation system acts as catalyst to endorphin releaser, therefore, after swim-with-dolphin programs adults were feeling very excited and enjoyed.

The assessment of the patients' life quality using SF-36 scale before and after the DAT demonstrates that such parameters as lifting or carrying groceries, climbing one flight of stairs, bending, kneeling or stooping, walking several blocks, one block, having a bath or dressing yourself, accomplished less than you would like, were limited in the kind of work or other activities, had difficulty performing the work or other activities (for example, it took extra effort), I seem to get sick a little easier than other people, I am as healthy as anybody I know and I expect my health to get worse, remained the same and DAT did not have any effect on them. Such important parameters as general health, physical activity, emotional issues and pain, changed statistically significantly (Tables 4, 5 and 6).

*Table 4 The measuring results of SF-36 before and after DAT*

	Before DT/After DT	N	Mean	Std. deviation	Sig.	Effect size Cohen's d
In general, would you say your health is	Before DT	14	30.36	22.315	<b>0.002</b>	22.582
	After DT	14	57.14	22.847		
Compared to one year ago, how would you rate your health in general now?	Before DT	14	48.21	20.719	<b>0.002</b>	22.430
	After DT	14	75.00	24.019		
Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports	Before DT	14	14.29	23.440	<b>0.009</b>	26.338
	After DT	14	39.29	28.947		
Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling or playing golf	Before DT	14	35.71	30.562	<b>0.003</b>	31.449
	After DT	14	71.43	32.310		
Climbing one flight of stairs	Before DT	14	53.57	41.437	<b>0.025</b>	36.877
	After DT	14	82.14	31.666		
Walking more than a mile	Before DT	14	57.14	43.222	<b>0.036</b>	35.258
	After DT	14	82.14	24.862		
Cut down the amount of time you spent on work or other activities	Before DT	14	78.57	42.582	<b>0.035</b>	30.110
	After DT	14	100.00	0.000		
Accomplished less than you would like	Before DT	14	14.29	36.314	<b>0.022</b>	44.783
	After DT	14	50.00	51.887		

*Source: The measuring results of SF-36 before and after DAT. n=14*

Similar research findings were mentioned in randomised controlled trial Antonioli & Reveley (2005) study where patients with depression took part. The research also revealed that depression symptoms significantly decreased in 2-week dolphin therapy program, including physical pain associative with depressive prevalence.



**Table 5 The measuring results of SF-36 before and after DAT**

Before DT/After DT		N	Mean	Std. deviation	Sig.	Effect size Cohen's d
Didn't do work or other activities as carefully as usual	Before DT	14	21.43	42.582	<b>0.028</b>	47.173
	After DT	14	57.14	51.355		
Emotional problems interfered with your normal social activities with family, friends, neighbours or groups?	Before DT	14	42.86	20.636	<b>0.000</b>	21.291
	After DT	14	75.00	21.926		
How much bodily pain have you had during the past 4 weeks?	Before DT	14	48.57	26.849	<b>0.007</b>	27.114
	After DT	14	75.71	27.376		
During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?	Before DT	14	58.93	27.045	<b>0.018</b>	25.744
	After DT	14	80.36	24.374		
Did you feel full of energy?	Before DT	14	38.57	27.695	<b>0.001</b>	24.939
	After DT	14	70.00	21.839		

Source: The measuring results of SF-36 before and after DAT. n=14

**Table 6 The measuring results of SF-36 before and after DAT**

Before DT/After DT		N	Mean	Std. Deviation	Sig.	Effect size Cohen's d
	After DT	14	64.29	22.434		
Have you felt so down in the dumps that nothing could cheer you up?	Before DT	14	38.57	21.432	<b>0.001</b>	25.527
	After DT	14	71.43	29.051		
Have you felt calm and peaceful?	Before DT	14	48.57	27.972	<b>0.001</b>	21.407
	After DT	14	75.71	11.579		
Did you have a lot of energy?	Before DT	14	34.29	19.890	<b>0.000</b>	16.274
	After DT	14	75.71	11.579		
Have you felt downhearted and blue?	Before DT	14	31.43	10.271	<b>0.000</b>	13.947
	After DT	14	72.86	16.838		
Did you feel worn out?	Before DT	14	30.00	20.381	<b>0.000</b>	22.434
	After DT	14	72.86	24.315		
Have you been a happy +A61:A74 person?	Before DT	14	25.71	21.381	<b>0.000</b>	17.790
	After DT	14	77.14	13.260		
Did you feel tired?	Before DT	14	27.14	24.315	<b>0.007</b>	23.110
	After DT	14	50.00	21.839		
During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?	Before DT	14	41.43	19.945	<b>0.000</b>	22.114
	After DT	14	74.29	24.088		
My health is excellent	Before DT	14	25.00	25.944	<b>0.003</b>	28.947
	After DT	14	57.14	31.666		

Source: The measuring results of SF-36 before and after DAT. n=14

The research results while measuring the behavioural change before and after DAT programme for people suffering from organic depression brought to the light that it was an increase of positive social behaviour after the 1st, 3rd and 6th DAT sessions, the positive behaviour improved after every DAT session (Table 7, 8). However, a significant increase was revealed in most cases when comparing results of the 1st and 6th DAT sessions. The negative social behaviour after DAT decreased; however, significant changes were revealed in three (defensive, cautious; bad or depressed; morose) out of 17 variables. Such variables as: quite obstinate, honest/ moral, maintains eye contact, is able to express in words, remained without change however, not all of these variables were significant in general for this group of participants. Two variables, working in team and self-confident, have changed very quickly, as revealed when measuring the 1st and 3rd sessions of DAT. Already mentioned randomised study of Antonioli & Revely (2005) also revealed that the therapy with dolphins was effective in alleviating similar symptoms of depression after two weeks of treatment while measuring with Hamilton rating scale and Beck depression inventory.

*Table 7 The measuring results of Chandler Psychosocial Session form: Positive social behaviour after the 1st, 3rd and 6th DAT sessions (main results)*

	Number of DAT session	Mean	Std. deviation	Sig. 1 vs. 3	Sig. 1 vs. 6
T1. Participating, engaging in activities	1	3.43	0.85	0.061	<b>0.000</b>
	3	3.86	0.53		
	6	4.83	0.39		
T2. Positively interacting, communicating with others around	1	3.50	0.94	0.059	<b>0.000</b>
	3	4.00	0.68		
	6	4.83	0.39		
T3. Collaborating	1	3.57	0.94	0.089	<b>0.000</b>
	3	4.00	0.68		
	6	4.92	0.29		
T5. Focuses, careful with a task	1	3.50	1.09	0.190	<b>0.001</b>
	3	3.86	1.03		
	6	4.67	0.49		
T9. Leading	1	2.21	1.31	0.075	<b>0.001</b>
	3	2.86	0.95		
	6	3.83	0.94		
T10. Working in team	1	3.64	0.74	<b>0.036</b>	<b>0.000</b>
	3	4.14	0.66		
	6	4.75	0.62		

Source: The measuring results of Chandler Psychosocial Session form: Positive social behaviour after the 1st, 3rd and 6th DAT sessions (only main results are displayed).

n=14

Because of the lack in scientific studies on dolphin assisted effect to adults with depression, the results of this study could be supported by Webb & Drummon (2001) study which also brought to the light that 2-week swim with dolphins' program in general lowered anxiety level and increased positive psychological effects, and well-being of healthy participants. However, the study showed that dolphins were the key factor only for anxiety features. Similar psychosocial parameters are measured as significantly changed in this presented research.

*Table 8 The measuring results of Chandler Psychosocial Session form: Positive social behaviour after the 1st, 3rd and 6th DAT sessions (main results).*

Number of DAT session	Mean	Std. deviation	Sig. 1 vs. 3	Sig. 1 vs. 6
T13. Flexible, open to novelties	1	2.93	0.032	<b>0.000</b>
	3	3.71		
	6	4.67		
T15. Feels positively	1	3.00	0.013	<b>0.000</b>
	3	3.79		
	6	4.58		
T17. Empathetic	1	3.64	0.237	<b>0.003</b>
	3	3.93		
	6	4.67		
T20. Solving problems	1	3.29	0.168	<b>0.001</b>
	3	3.64		
	6	4.58		
T21. Self-reliant	1	2.21	<b>0.025</b>	<b>0.000</b>
	3	3.00		
	6	4.08		
T22. Appreciating oneself	1	2.00	0.060	<b>0.000</b>
	3	2.64		
	6	3.75		
T23. Knowing oneself, understanding oneself	1	2.79	0.145	<b>0.002</b>
	3	3.21		
	6	4.17		
T24. Understanding others	1	3.21	0.237	<b>0.001</b>
	3	3.43		
	6	4.33		
Positive behaviour (overall)	1	82.71	0.075	<b>0.000</b>
	3	92.36		
	6	111.92		

To sum up the research findings, it can be stated that different studies show that humans find a variety of ways in which interact with animals. With the domesticated animals people are sharing daily lives. Animals are involved in sports, entertainment (Hollin, 2021) or they have positive therapeutic effect, like

Dolphin assisted therapy in Lithuania which is a medical and licenced practice (Lietuvos Respublika, 2023). Unfortunately, despite the limitations of dolphin assisted therapy research the major investigated groups of patients in a history were targeted towards cognitive, social, behavioural changes in children with autism, Down syndrome, Rett syndrome, developmental delays (Kreiviniene, Mockeviciene & Alijosiene, 2021; Nathanson, 1989; 1998; Nathanson, deCastro, Friend, & McMahan, 1997; Breitenbach, Stumpf, Fersen & Ebert, 2009; Lotan, 2007). The presented study covers adults with organic depression, which has closest comparison to the study of Bin MdYusof & Kok Hwee Chia (2012) where Chandler's psychosocial session form and other validated instruments showed significant change in reduction in stereotyped behaviors and a significant improvement in communication and social interaction in high functioning autism. The study of Birch (1998) could support this research findings from the bioacoustics perspective that people being in the water with dolphins are affected positively with endorphin release by dolphin's bioacoustics sonar. Similar findings using validated psychosocial instruments were measured in swim-with-dolphins program with healthy adults (Webb & Drummon, 2001). However, the methodologically closest conducted studies of Kamioka et al., (2014) and Antonioli & Reveley (2005) proves this study findings that after 2-week dolphin assisted therapy patients with depression experience betterment in severity of depressive symptoms, lower level of anxiety, has significant improvement in social involvement, participation, and self-perception. Therefore, it can be stated that dolphin assisted therapy is effective method to apply not only in mild and moderate depression but also as an effective complementary method for organic depression.

## **Conclusions**

- The research results show that psychosocial characteristics of the patients suffering from depression have statistically significantly changed, patients' self-assessment of health has changed statistically significantly, significantly increased physical activity as well as decreased feeling of pain have been recorded, statistically significant decrease of negative characteristics of depression and more positive self-assessment, team spirit, empathy, self-reliance have been reported. This allows us declaring that the dolphin assisted therapy significantly changes welfare of people suffering from organic depression when assessing both physical and psychosocial parameters. However, it is necessary to conduct long-term measurements in the future to find out for how long these changes remain.
- After analysing 33 sessions of the dolphin assisted therapy, it was found out that the dolphins behaved positively during the sessions. In 31 sessions, the dolphin behaviour was characterised as positive, in 2 as more positive than

negative. There were no sessions when the dolphin behaviour would be evaluated as more negative than positive or fully negative.

- After analysing the dolphin behaviour in all three parts of the therapy, it was discovered that the dolphin behaviour remained positive throughout an entire DAT session: the median for the part 1 of the DAT sessions was 3.833, for the part 2 it was 3.857, for the part 3 it was 3.857 (where 1 is negative behaviour; 2 – more negative than positive behaviour; 3 – more positive than negative behaviour; 4 – positive behaviour). As no statistically significant difference among the medians was found, the behaviour can be described as stable.
- The research revealed that the positive and stable behaviour of the dolphins remained throughout an entire session. Such results allow drawing an assumption that existing conditions for the DAT are suitable for the dolphins. It is also important to note that the dolphins participate in the DAT sessions less often than in the course of the present research (the dolphins are rotated so that they would have more diverse activities). Often, a dolphin takes part in a DAT session for a half of the set time and is then substituted by another dolphin, so that activities were made more diverse for them. Regular conditions are much more simple than those for the research (when a dolphin participates in the DAT for ten consecutive days); therefore, it can be considered that the dolphins do not become tired during the DAT sessions.
- No other analogous research dealing with the dolphin behaviour during the DAT sessions were found in literature; therefore, the obtained results cannot be compared with results obtained by other researchers. Nevertheless, Trone & Kuczaj (2005) investigated the behaviour of dolphins who participated in dolphin-human entertaining swimming programmes. The researchers also assessed the frequency of dolphin behaviour and found out that the interactions were not harmful for the participating dolphins.

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# THE EXPERIENCES OF SIGHTED PEOPLE IN COMMON SOCIO-CULTURAL ACTIVITIES WITH BLIND PEOPLE

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**Abstract.** *The organisation of joint hikes for the blind and sighted is a completely new and untouched topic, the study of which can help to discover unexpected results, to show the significance and benefits of such activities not only for the blind but also for the sighted, their perception, new inner experiences, discoveries. Joint socio-cultural activities are not only a medium for the empowerment of the disabled, but also the education of empathic members of society and the promotion of new programs. The aim of the research is to reveal the experiences of sighted people participating in joint hikes with blind people. Semi-structured interviews were used to collect qualitative data. The research participants were 8 sighted people who had participated in joint hikes with the blind people. Thematic analysis was conducted. The experiences of the sighted and the blind have revealed that joint walks “erase” all differences, all borders. Sighted people see and learn what visual impairment is, what kind of world blind people live in – this brings them even closer to their comrades and encourages the desire to extend their friendship.*

**Keywords:** *blind, inclusion, sighted, socio-cultural activities.*

## Introduction

The prospects for a blind person to live a full life are conditioned by a positive public attitude and the search for mutual interaction opportunities: the readiness of the sighted to accept a different individual and the blind person's efforts to be active and empowered. Blind people should be more actively involved in the social activities of the sighted community, working together with people who have no personal support needs, and joint socio-cultural activities, that increase the inclusion of blind people in society and create positive change by shaping society's empathy and values, can be a tool to achieve this.

For the first time in this kind of work, the experiences of joint socio-cultural activities for blind and sighted people are based on empirical research, using hikes as an instrument. The scientific analysis and the empirical research findings are useful in practice for social work professionals seeking to empower people with visual impairment, working with people with visual impairment, and seeking to get a better understanding of the client's "world". The results of this research are

also useful for managers and specialists in educational institutions and people responsible for education policy-making while implementing the model of inclusive education, for makers and implementers of social policies for people with disabilities focusing on the social well-being and inclusion of people with disabilities.

The aim of the research is to reveal the significance of joint socio-cultural activities of blind and sighted people. Research methods: analysis of scientific literature, legal documentation, ongoing programs; semi-structured interviews with participants (blind and sighted); qualitative content analysis.

### **Literature review**

Socio-cultural activities are diverse and include recreation, arts and culture, community building, education and upbringing. These activities often have more than one objective. For example, recreation and leisure activities allow people to relax as well as gain new knowledge, meet people, make contacts, share experiences and have discussions. Sharing ideas and having conversations are also an important condition for educational processes (Spierts, 2003). Therefore, socio-cultural activities are complementary and intertwined. According to J. R. Sinkuniene (2012, 48), socio-cultural activities are "aimed at preserving the traditional cultural values of a nation, so that a person who has learnt to assess and express his/her opinion could successfully fit into society. This facilitates (self-) identification processes, changes people's attitudes, values and self-esteem".

Organised leisure, as one of the socio-cultural activities, helps to involve blind people in the community through activities (from artistic self-expression, crafts (ceramics, weaving, folk art), participation in cultural and religious events, artistic self-expression collectives, to craft fairs and exhibitions presenting their works), travelling, visiting tourist destinations (Blind people and community: experiences, ideas, tips, guidelines, 2008).

Socio-cultural activities are significant for people with disabilities as well as for people without disabilities. According to M.E. Kudryatseva & S.S. Lebedeva (2022), persons with disabilities who actively participate in socio-cultural activities become involved in the community and avoid social exclusion, they feel like equal members of society, as they can make use of their abilities and feel that their lives are meaningful. Socio-cultural activities contribute to constructing an inclusive society. According to E.T. Mirzajonova (2022), socio-cultural activities help people with disabilities to establish social relations, allow them to recognise and develop creative abilities, satisfy aesthetic interests, adapt more easily to society and resolve difficult life situations. V. Gudzinskiene and A. Driskienė (2016) state that activities help people with disabilities in their self-realisation, they reduce feelings of loneliness, increase self-esteem, improve emotional well-being, allow them to engage in their favourite activities and learn new things. If

people with disabilities find meaningful activities where they feel good and safe, it has a positive impact on their self-confidence, health and quality of life.

Socio-cultural activities – recreation as part of tourism – are inseparable from leisure, travel and hikes. Hiking as a tourist activity is considered to provide physical and mental benefits to individuals, and is associated with leisure time, relaxation, and the desire to know, feel and see (Nordbo & Prebensen, 2015). It is one of the cheapest ways of travelling with significant benefits for well-being, behavioural change, socialisation, inclusion, self-fulfilment and promoting communication (Mitten, et al., 2018).

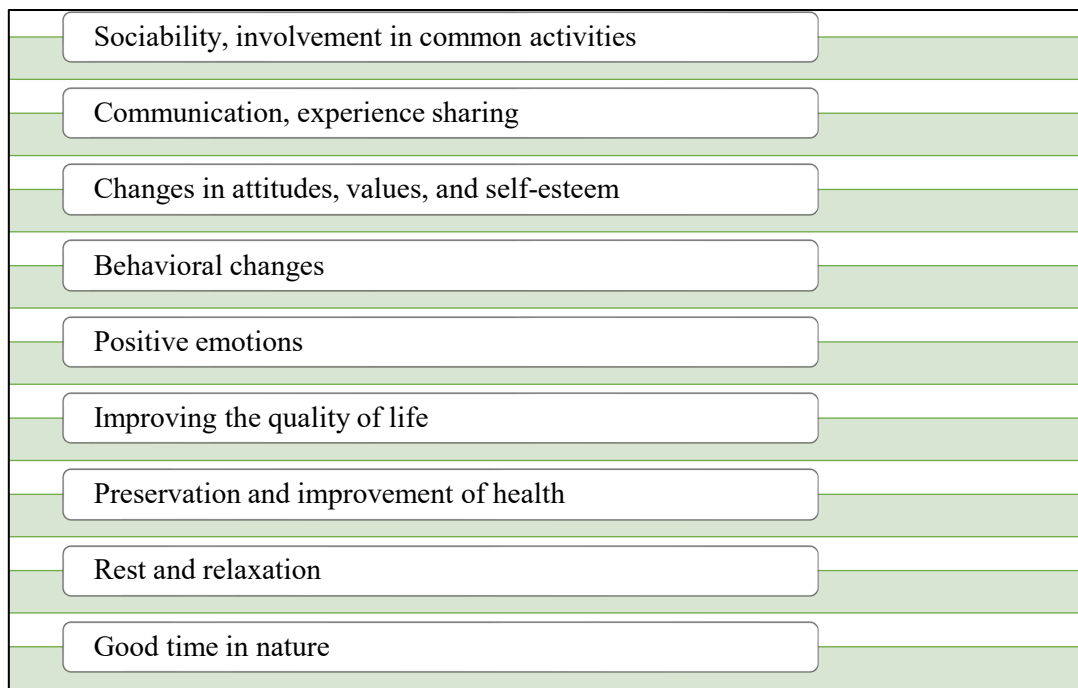


Figure 1 *The significance of hiking as a socio-cultural activity* (Mitten, et al., 2018; Gomez-Marti, 2019; Winter, et al., 2020; Bandukda, et al., 2020)

As indicated in Fig. 1, hiking as a socio-cultural activity changes the values, behaviours, lifestyles, and attitudes towards health in communities and individuals as well as provides multiple benefits for both persons with and without disabilities (i.e., from a sense of community, communication, rest and relaxation, to self-esteem, behavioural changes, improvement of health and overall quality of life.

### Methodology

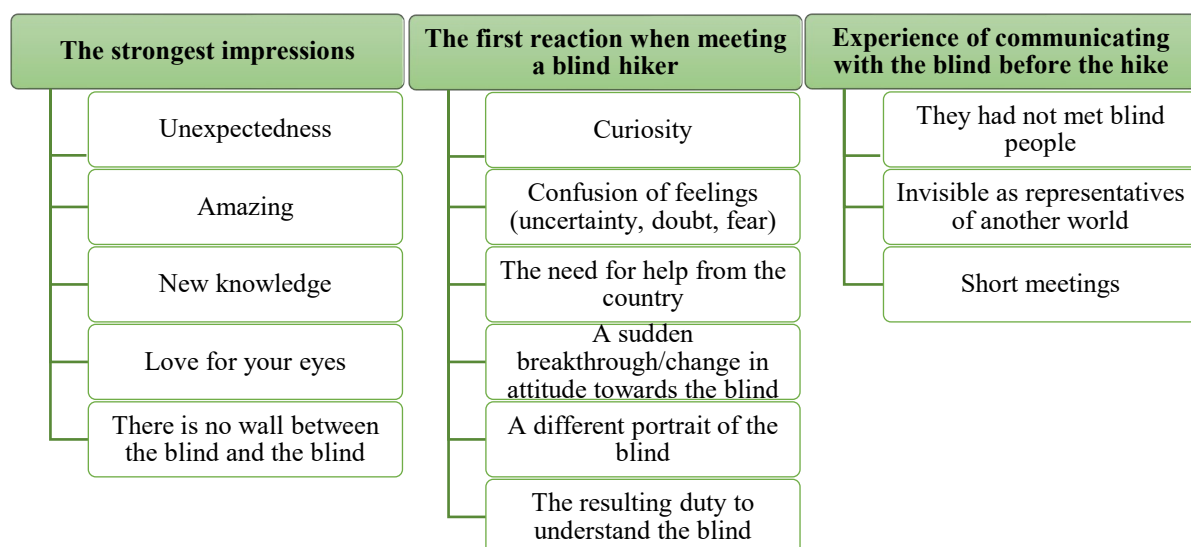
The research was conducted following the theory of the social construction of reality. The essence of this construction was revealed by Berger & Luckmann (1999), who emphasised the importance of the lived experience of the individual as the basis of everyday knowledge.

Qualitative research was conducted. Semi-structured phenomenological interviews were used with blind and sighted individuals participating in joint socio-cultural activities. The composition of the research instrument - interview questionnaires - was designed to find out the following: 1) the experiences, feelings, communication and meaning of joint activities of blind people when participating in joint hikes with people without disabilities; 2) whether the non-disabled people became more aware of the world of the blind people through the joint activities, what they felt and how they behaved and communicated in the joint activities, whether they became more empathic to the blind people, what they lacked, etc.

The following selection criteria were applied for the targeted criteria selection of the research participants: 1) the participant is blind or sighted; 2) the participant has participated in at least five joint hikes of blind and sighted people lasting for at least two days. Only blind and sighted people who had participated in socio-cultural activities together, i.e., at least five two-day hikes, and who were able to share their experiences, impressions and emotions, were selected as interviewees. The sample of the research consisted of 14 participants, including 8 sighted and 6 blind individuals. This number was chosen because this is the average number of participants in one hike. The research was conducted between August 2022 and January 2023.

## Research results

The analysis of the research data helped to identify the experiences of interaction with blind people before the hike and the strongest impressions and reactions when meeting blind hikers (Fig. 2.):



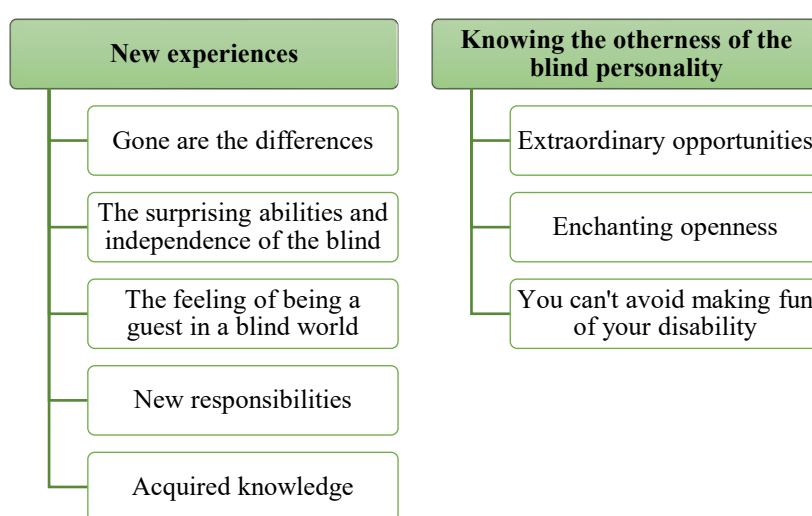
*Figure 2 Analysis of the research participants' strongest impressions after hiking with the blind: categories and subcategories*

Research participants reported that when they saw blind people participating in the hike, they experienced a strong unrecognised emotion. This emotion was both confusing and seemed unusual because they had not had such an experience before the hike: *the unexpected one is not the one that remains after all hikes but the one that was the strongest for me. It is the strongest; sometimes, without knowing, you don't even think that they are blind; the emotion is new, unknown <...> something unusual because it caused me a very strong emotion.* The sighted people participating in the research were amazed at the independence of blind people and their ability to hike together: *surprise at the fact that these people hike as if they could see <...> that I would not be able to do it if I suddenly lost sight; it was quite strange and strange when I have realised that they live just like we do, they just have to have a person by their side at certain times, but otherwise, they are completely independent people.* Research participants, seeing the independence of the blind, began comparing their abilities with their own. They were surprised by what they saw and realised that blind people could live the same life as they did. Sharing their experiences, the sighted research participants noted that after the hike, they gained new knowledge and information about blind people which enriched them greatly by empowering them to think and behave differently. The world of the blind that the research participants got to know allowed them to discover the joy of sight. After the joint hike, the sighted were overwhelmed by the sense/feeling of unity with the blind. The first reactions to meeting blind hikers were very different. Some research participants were curious when they met blind people: *there was a lot of curiosity <...> curiosity led; it was interesting; and you want to interact and so on and you have no idea how.* Meanwhile, others felt a mixture of feelings (from uncertainty to doubt and even fear): *I was scared because I did not know what I would have to do, whether I would have to help or guide them here; at the beginning, I was surprised <...> I had no idea how they were going to go being unable to see; I wished that I would not have to guide them, because I did not know how to do it. Maybe I was even afraid <...> if this hike really was the place where they should be?*

The research revealed that after the hike, the sighted people created a portrait of a blind person which is full of surprising aspects, unexpectedly noticed strengths of the blind that those without visual impairment could learn from: *I have noticed such an inner strength <...> the strong people, as I said, are capable of seeing through the heart. I was surprised by another thing, maybe their determination to achieve their goals <...> they are quite strong-willed. Ambitious. Ambitious but at the same time compassionate; people can fully enjoy life and sometimes those who see everything can learn from them.* Research participants did not feel the difficulties they expected to experience on the hike, they thought that everything would be more difficult with blind people, they would have to be guided; therefore, they were surprised and changed their attitudes towards blind people. For some, it was very simple, while others, when they found themselves

next to blind people, tried to get to know their fellow hikers as well as any other person they met in life. To meet the needs of the blind during the hikes, the research participants tried to understand how the blind perceived the world. Many had no experience interacting with blind people before the hike. Several participants admitted that they had previously thought of blind people as being from another world. There was a disassociation and uncertainty because that world was unfamiliar: *it is not your world and not your business and you do not understand anything there; the world of the blind was unfamiliar to me.*

The significance of joint socio-cultural activities with blind people was revealed (Fig. 3):



**Figure 3 Significance of research participants' socio-cultural activities with blind people: categories and subcategories**

Research participants stated that the differences between them and the blind disappeared in joint activities with the blind. Some participants were so involved in joint activities that they forgot they were with blind people. Research participants were amazed by the abilities of the blind people they saw during the hike and learned about from the blind people's stories. The participants were very surprised by the blind people's independence in familiar and new environments and their efforts to take care of their everyday activities, provide for themselves and find the things they needed. The opinion was expressed that we should be like guests who wander into the world of the blind, where there is respect, assistance, care and good emotions.

It has been revealed that hikes with the blind encourage responsibility for the person next to you, teach people to be attentive and alert, and take care of their personal safety as well as the safety of the person hiking nearby. This creates a bond between the hikers and trust in each other. It has been observed that hiking

with the blind, the conversations and support that are established, allow the acquisition of knowledge that is very meaningful.

Research participants got to know blind people who are energetic, have goals for the future and live full lives. They thought that people without disabilities were not always so persistent and knew how to enjoy life: *they are full of energy and full of plans, and just, how they will make money, how they do sports, just a full life, and they tell about all kinds of adventures <...> we complain about little things when they have a completely different world, contact with the world; we are so weak in front of them. So vulnerable in our ability. Our ability against disability.* Half of the research participants were surprised by the openness of blind people to questions about disability. They noticed that as soon as they made contact, the blind people were very open and willing to talk about themselves and their disability, they did not consider the questions to be uncomfortable and were willing to engage in dialogue: *the most surprising was their openness and humour, their positive approach to life; they were talking about it very openly.* The blind people were so open that they did not shy away from making fun of their disability (*you can make fun of things, like falling into a hole. Or tripping over something, falling down, the issues that could seem very sensitive*).

The analysis of the interviews with the blind indicated that the hikes enriched and brought together the worlds of the blind and sighted through joint activities and communication (Fig. 4.).

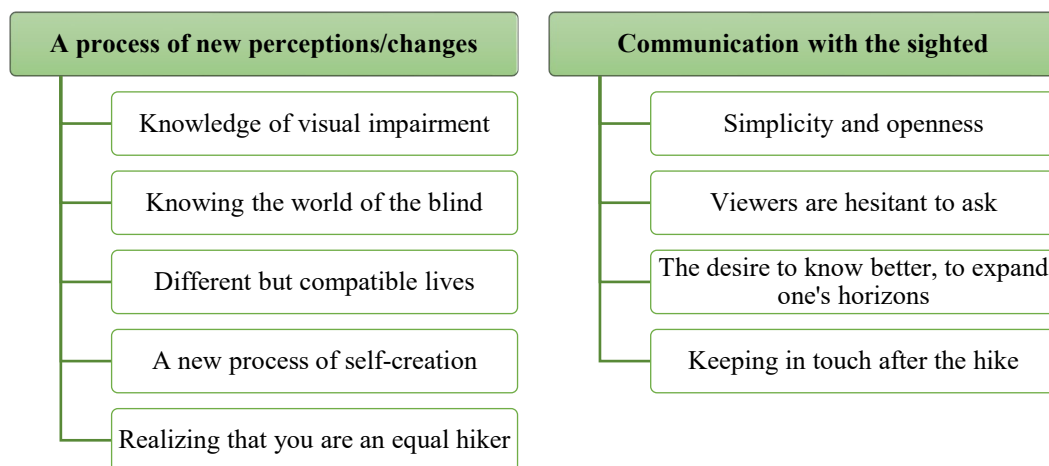


Figure 4 Analysis of changes influenced by hiking: categories and subcategories

From the perspective of the blind, the hikes allowed the sighted to learn more about their disability. The hikers were interested in the characteristic symptoms of visual impairment, when the participants lost their sight, whether blindness was congenital, and whether there was a family history of such cases. Blind people also tried to make sighted people aware of their disability: *first of all, I try to give people information, to tell them about all the specifics of people with visual*

*impairment, perhaps communication possibilities and all the other things, so that people have that information and understanding and they could feel free and unrestricted to communicate fully.*

During the hikes, blind people were asked various questions related to their daily life and routine, hobbies, mobility, adaptation in the domestic and public space and urban environment. They tried to answer these questions and tell people how they live and deal with difficulties. It has been revealed that although the lives of blind and sighted people seem different, they are similar: *the lives of blind and sighted people are somewhat different, but can be very compatible; the daily routine of blind people is not different from that of sighted people, except that blind people sometimes need more extensive non-visual sensory support to access information or perform an action, or the use of special tools adapted to the blind.* According to the research participants, although it is assumed that blind people are unable to participate in joint activities, the reality is different: their disability does not prevent them from engaging in activities they enjoy with sighted people.

After the hike, the blind people started to realise that they are important and capable of self-realisation, they can experience new things because a new process of self-construction has begun. Blind people discovered new possibilities for themselves: *new opportunities to know themselves first, then to know others, to learn, experience, discover something new and broaden their horizons, to explore possibilities in general; I can realise myself and grow, know myself even better and allow other people to know me.* This process was influenced by the participation of sighted people, their attitude towards the hikers, their appreciation of their capabilities, and their closer acquaintance with each other. When hiking with sighted people, blind people felt equal to everyone instead of marginalised and excluded: *when we experience hiking, we do not feel marginalised, because we hike and participate in journeys equally, which reduces social exclusion; I always felt that people spoke to me, I did not feel excluded, I felt that I was in my space with my company.* There was a realisation of the absence of borders between the blind and sighted worlds, the blind felt that through the eyes of the sighted, they became people just like them but with a slight impairment that did not interfere (*you realise that any limits, borders, if there were any, they are practically gone*).

The research results have revealed that for the blind, communication with sighted people is a particularly important part of the hike. It is characterised by simplicity and openness, mutual encouragement, willingness to get to know each other better, broadening horizons, and keeping in touch after the hike. A unique communication is established; it creates a strong bond that people do not want to break. For the blind, communication is a motive to hike.



## **Discussion**

Through the hikes, blind people have brought sighted people closer to themselves, their disability and the world in which they live through their communication. Blind people noticed how attitudes towards them changed and sighted people started to see disability in the same way blind people do. The above-mentioned research finding reflects the theory of the social construction of reality by P.L. Berger & Th. Luckmann (1999) in which the understanding of reality is dynamic. During the hikes, blind people were the first to encourage other hikers in attempts to find common ground and dispel uncertainty about the blind people's lives, their ability to hike and take care of themselves. According to J. Ruske (2014), social participation and active involvement provide conditions for positive acceptance and a realistic view of one's disability which is the basis for the construction of dignity in persons with disabilities.

By meeting on hikes and engaging in common favourite activities, sighted and blind people experienced a sense of togetherness allowing them to build a meaningful and mutually enriching relationship. They felt part of a community while hiking. According to Ruske (2014), togetherness is one of the components of the subjective concept of dignity in persons with disabilities; it opens the heart, making us vulnerable and sensitive to the other. Togetherness is about equality, friendship, harmony with the environment and shared experiences. There are common points with the research work of J. R. Sinkuniene (2012, 41), as "those community members who have been publicly encouraged or rewarded in the community feel a greater sense of belonging and are more connected to it".

After the hiking experience, the blind construct a new self-creation, a realisation that disability is not such a big disadvantage that it could prevent them from joint activities and making friends. A similar approach is expressed by P. L. Berger & Th. Luckmann (1999, 166) because "the individual becomes who he/she is perceived to be by others who are significant to him/her", and interaction with others impacts the baggage of social knowledge and self-construction. The research results confirmed the statements by M. Spierts (2003) that education and upbringing in socio-cultural activities help to develop competencies and skills that lead to adequate individual and social behaviour, and that animation, as manifested in educational activities for the blind, stimulates people and helps to build social relations. The insights by other authors that being in nature is relaxing, allows one to know it better and experience positive emotions have also been confirmed (Gomez-Marti, 2019; Bandukda, et al., 2020; Winter, et al., 2020).

## Conclusions

1. The research on the experiences of joint socio-cultural activities of blind and sighted people has revealed the significance of hiking as an important and new socio-cultural activity that has not been researched before.
2. The experiences of sighted and blind people revealed in the research have highlighted that joint hiking "erases" all differences and borders and breaks down stereotypes. Sighted people have the opportunity to see up close and learn about visual impairment and the world blind people live in, which brings them even closer to their fellow hikers and encourages their wish to maintain their friendships.
3. Hiking as a joint socio-cultural activity is more than a form of tourism or recreation. A joint hike of blind and sighted people is a multidisciplinary activity, including educational, animation, social communication, sport, tourism, social psychology, public health, and other fields of view.
4. In the future, hikes could become one of the effective socio-cultural activities for sighted and blind people to get to know themselves better, express themselves and feel like equal members of society.

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# INSUFFICIENT PHYSICAL ACTIVITY AND ITS IMPACT ON NATIONAL ECONOMY AND SECURITY

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**Abstract.** *Healthy and active people not only strengthen the health of the population of Latvia, prolong life in good health, prevent premature mortality, but also make an important contribution to the economic development and security of the country. Unfortunately, Latvia ranks among the last places in a number of areas among the EU member states. Latvian Health and Fitness Association (LVFA) has adapted the “Deloitte Research” global study on the preventive impact of physical activity on the national economy to the circumstances in Latvia, revealing that the Latvian economy suffers significant losses every year due to physically inactivity among the population. Furthermore, insufficient physical fitness also affects the internal and external security of the country. Must be concluded also across the globe governments face rising healthcare costs and the increasing prevalence of lifestyle diseases. This raises questions as to how bet improve the health of populations, while keeping healthcare and security costs under control. The aim of the article is to study the impact of insufficient physical activity on the national economy and security, to recommend directions for policy development in this field, and to propose improvements of the legal framework. Analytical method, comparative method, as well as the method of qualitative and quantitative data analysis were used in the development of the article.*

**Keywords:** *economy, public health, security, sport.*

## Introduction

Since the restoration of Latvia’s independence, much has been done – a democratic state system has been established and developed along with a liberal and open market economy, and Latvia has successfully integrated into international structures, yet it can be concluded that the country’s development has been insufficiently consistent and coordinated. Several scenarios are possible in the further development of Latvia, but it must be recognised that only a human-centred growth model (Latvijas izaugsmes modelis. Cilvēks pirmajā vietā, 2005) can ensure a rapid and stable path towards the average standard of living of the EU member states, which corresponds to the protection of the rights and interests of each individual and thus Latvia’s national interests.

Although each of us may have different values, priorities, and personal interests, in general, one can say that each individual’s most important needs are focused on three vital factors: well-being, safety and sustainability. Healthy and active people not only strengthen the health of the population of Latvia, prolong

life in good health, prevent premature mortality, but also make an important contribution to the economic development and security of the country.

The Latvian Health and Fitness Association in cooperation with the Statistical Laboratory of the University of Latvia has adapted the global study by Deloitte Research on the preventive impact of physical activity on the national economy (Economic Health & Societal Well-being: Quantifying the Impact of the Global Health & Fitness Sector Global Report, 2022), revealing that physical inactivity among the Latvian population is insufficient, and thus considerably impacting the overall public health situation and the Latvian economy. Furthermore, insufficient physical fitness of the relevant defence and security institutions' personnel also affects the internal and external security of the country.

A significant number of quantitative and qualitative studies on the impact of physical activity on human health have been carried out in Latvia and Europe, ranking Latvia among the last places in a number of areas among the EU member states. An interdisciplinary approach is fundamentally important in the development of all sectors. This means that social, economic, legal, political, psychological, etc. aspects must also be taken into account in the analysis of sport and physical activity.

The aim of the article is to study the impact of insufficient physical activity on the national economy and security, to recommend directions for policy development in this field, and to propose improvements of the relevant legal framework. The scientific novelty of the article is rooted in an interdisciplinary approach to the exploration of the sport sector, including social and economic impact assessment.

### **An outline of the sport environment in Latvia and the world**

The origin of sport dates back to 776 BC, with the emergence of the Olympic Games in ancient Greece. Religion played a significant role in Greek life and the Olympic Games had a strong religious component, i.e. worshipping of gods. (Oksleids & Bolheimers, 2000). Nowadays, sport is available to every individual, and athletic achievements are no longer associated with religious rituals and worshipping of gods. In the 21<sup>st</sup> century, the interpretation of the concept of sport reveals a much broader impact on society. Sport is an important part of the culture of society, which ensures the fulfilment of various state functions in society – educational, health, social, cultural, economic, political, recreational, and entertainment, thus highlighting the multifaceted nature of the concept of sport.

Conventionally, sport is understood to mean all types of individual or organised activities in order to maintain and improve physical and mental health, and also to achieve success in sports competitions (Sporta likums, 2002). However, it is not possible to look at the concept of sport only from such a narrow

point of view. It is known that more and more people are not only engaged in sports, watching sports, reading about sports and attending sports events. Sport is not only engaged in school and leisure time, but for many people it is also a profession, also becoming an important part of the media content. As J. Alfejeva rightly points out, the perception of the inseparable relationship between sport and physical activity has changed over time, and sport disciplines include activities that are not directly related to physical exertion, such as chess, checkers and bridge (Alfejeva, 2018).

The European Sports Charter (revised by the Council of Europe on 13 October 2021) offers a broader view of the concept of sport than in the so-called traditional or narrow approach, namely, all forms of physical activity which, through casual or organised participation, are aimed at maintaining or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels (European Sports Charter, 2021). Thus, the concept of sport, which once was characterised only by striving for high achievements, has become much broader today. The definition of sport in the Charter, which initially links sport with physical activity, also refers to the improvement of the mental state, emphasizing the importance of its social role and the creation of social relations.

In Latvia, targeted development of the sport sector and the relevant legal framework began in 2002, when the Sports Law was adopted. The purpose of this Law is to specify the general and legal basis for sports organisation and development, mutual relationships of sports organisations, State and local government institutions and basic tasks in sports development, and the basis for the financing of sport, and also the principles that shall be followed when taking part in the international sports movement (Sporta likums, 2002). Since 2004, the Latvian Government has also approved a number of policy documents, most recently, the Sport Policy Guidelines 2022-2027.

According to Section 5 of the Sports Law, the Ministry of Education and Science plays a leading role in the implementation of sport policy. The development of the national sport policy also involves the Latvian National Sports Council, which includes several other important organisations – the Latvian Sports Federations Council, the Latvian Olympic Committee, the Latvian Health and Fitness Association, etc., the aim of which is to promote the development of sport and cooperation in the field of sport, as well as to take decisions on sport-related matters (Latvijas Nacionālās sporta padomes nolikums, 2003). On the one hand, the organisational governance structure of the sport sector is constantly and purposefully working on structural reforms and implementation of good practices in the sector, however, on the other hand, these initiatives are not always sufficiently effective in contributing to the sustainable development of the sector, the growth of the Latvian economy, and the promotion of public health.

According to the author, today, strategic planning in the Latvian sports sector has gained much greater and more acute significance due to several considerations.

Firstly, as the legal regulation of several sports activities evolves, the concept of sport is also included in the legislation. However, sport as a legal concept is still not clearly defined. In most cases, legislation and policy documents provide for a different interpretation of sport, and the responsible institutions lack a common understanding of the concept, mostly relying on a general understanding of the meaning of sport.

Secondly, the sport sector is currently in an unprecedented crisis of trust and reputation. In recent years, disagreements of different nature and scale, scandals and lack of discussion among sports organisations have emerged in the public space, which have had a negative impact on the reputation and trust of the sector.

Thirdly, in the joint health report published by the European Commission and the Organisation for Economic Co-operation and Development (OECD) in 2023, Latvia ranks along with its neighbour Lithuania as well as Hungary and Slovakia among the countries with the shortest life expectancy (Health at the Glance, 2023). This is largely due to unhealthy habits and lifestyles, as well as limited access to sport and health services. Effective and sustainable sport policy not only promotes athletic achievements and promotes healthy lifestyles, but also provides economic benefits. In turn, diverse physical activity not only provides physical and mental well-being, but also improves overall health, while further promoting social inclusion (*Sporta politikas pamatnostādnes 2022.–2027. gadam*).

Fourthly, as mentioned above, the sport sector is inseparable from the social and economic dimension. The sport and health sector makes an important contribution to the GDP and employment worldwide. Global studies show that every year the sector directly contributes several billions to the value added in terms of GDP and creates millions of jobs (Hafner, RAND, 2019). In addition, the sector supports indirect job creation and GDP contribution, generating demand for goods and services. Another important aspect that follows from Latvia's case analysis – every physically inactive employee costs the Latvian economy EUR 814.21 per year. The total annual loss to the state budget is EUR 41.5 million, due to the decrease in productivity caused by the lack of physical activity (*Ekonomiskā veselība un sabiedrības labklājība: Globālās veselības un fitnesa nozares ietekmes kvantificēšana - Latvija, Deloitte Research, 2023*).

Latvia has tried to implement various initiatives in the field of sport development, mostly in response to the pressing problems within the sport sector, however, it must be concluded that the development process has been fragmented with often ambiguous outcomes. The development of the sport sector requires a systemic approach, focusing both on general public policy areas and specific sport policies. The aim of sport policy is to develop not only high-performance competitive sport, but also grassroots sport, children's and young people's sport,

as well as the health and fitness sector, promoting physical activity and interest in sport among entire population, promoting access to and development of sports infrastructure.

Arguably, the global health and fitness industry has experienced rapid growth over the last decade. In the West, since the 1980s, health and fitness centres have become more widespread and in growing demand. With the development of the industry, the offer has become increasingly diverse – from large sports halls for a wide range of visitors to small specialised studios, high-tech and innovative fitness gyms. The sector's revenues have increased worldwide. This is due to the fact that especially in recent years the level of public awareness has increased and people attach an increasing importance to health and a balanced lifestyle. At the same time, various initiatives have been taken in many countries against sedentary lifestyles and in favour of health promotion, thereby further stimulating growth of the sector.

Examining examples of foreign practices, it is the countries in Asia, the Pacific region and Latin America that have shown the highest growth in the past decade. The rapid growth in these regions is natural, as the health and fitness sector in these regions is generally new and less saturated compared to North America or Europe, which gives the sector more growth opportunities. At the same time, with the development and rising income in these regions, the population increasingly turn to the Western way of life. In conclusion, sedentary work is increasingly spreading, the diet increasingly consists of low-quality food, which contributes to health problems and obesity. In response to these negative trends, many citizens, especially the younger generation, are focusing on physical activity and fitness, thus contributing to the development of the industry (IHRSA Global Report, 2023).

By comparison, the United States is still the largest fitness industry market in the world, followed by the largest European countries. The world's highest rates of physical activity among the adult population are in Sweden (34 %), the United States (30 %), the United Kingdom (23 %), Australia (23 %), and Germany (22 %). According to Eurobarometer, only 9 % of the Latvian population regularly engage in physical activity and only 7 % of the population attend sports clubs and/or gyms (EC Eurobarometer, 2022). Referring to a number of foreign studies, sports clubs are the environment where people learn to exercise properly without harming their health. Sports clubs have access to all the necessary infrastructure (TFCPS, 2002) and encourage discipline (Charness, Gneezy, 2009), highlighting the role of sports clubs in raising the level of public health and their integral role within the sport sector.



## **Impact of physical activity on the economy**

Another important aspect that the author wants to emphasise is the impact of physical activity on economic development. The most important indicators of Latvia's growth and development are determined by the synergy of three factors, with an equally important and complementary role. First, economic development. Second, comprehensive security. Third, democratic values and the protection of the public interests.

Examining the Economic development of Latvia Report 2023 and the economic outlook for the coming years, one may conclude that following the rapid recovery of the economy from the COVID-19 pandemic crisis in 2021, the economic growth in Latvia slowed to 3.4 % in 2022. Furthermore, in 2022, economic development was significantly affected by the disruptions in supply chains caused by Russia's invasion of Ukraine, rising inflation caused by energy and food prices, as well as by a declining global demand. In 2023, economic development continued to be influenced by geopolitical situation and uncertainty, high prices and rising bank interest rates (*Latvijas ekonomikas attīstības pārskats, 2023*).

As to the further development of the economy, it depends on the situation in the external environment, as well as on the progress of initiatives and reforms in all key national sectors. All sectors have a certain economic impact and the assessment of the economic contribution of each specific sector is measured in terms of value added, which is calculated as the difference between the revenues generated by the industry and the cost of the resources needed to generate these revenues. It is therefore an added value generated by the relevant sector.

A unique feature of the health, sport and fitness sector is its contribution not only to human health and fitness, but also its socio-economic added value. Lack of physical activity entails significant costs for the state and society. Understanding the wider socio-economic benefits that physical activity can bring, particular attention should be paid to healthcare and productivity, as they have a significant impact on the economy as a whole and, consequently, on national sectoral policies. However, it is also worth noting the significant personal benefits and improvements in the quality of life provided by regular physical activity.

Globally, estimates of savings in the healthcare sector provided by sports and fitness clubs, as well as productivity assessments in workplaces, are carried out using different methodologies. Savings in the healthcare sector are mainly based on relative risks and treatment costs of different diseases (Ding et al., 2016). In turn, the cost of a drop in productivity due to insufficient physical activity is measured by the number of working days lost due to absenteeism and sick leaves.

Examining these issues in the context of Latvia, the author refers to a significant study by Deloitte Research, which estimates that the health and fitness sector in Latvia generated direct added value of EUR 132.795 million in 2022. In

addition to the direct contribution to GDP, the sector supported an additional value added of EUR 70.912 million in its supply chain. The largest source of indirect value added was other commercial services, including legal services, marketing and security of the premises. The sector is also an important employer in relation to its size, which is characterised by a high share of part-time employment. The sector indirectly supported additional 3.3 thousand jobs.

From a socio-economic perspective, the author outlines two key aspects. First, studies show that physical activity improves human cognitive abilities, functionality, planning, speed of information processing, and concentration. It follows that lack of physical activity harms a person's cognitive ability and productivity while performing work duties, even if they are present at the workplace. An employee may be physically present but mentally incapable of productive work. Secondly, regular physical exercise brings a lot of health benefits, e.g. reduced risk of disease, including cardiovascular disease, stroke, hypertension, diabetes, dementia, as well as various forms of cancer. The disease factor entails significant costs for individuals and for the society as a whole, thus affecting every aspect of people's lives personally, socially and economically.

Based on data processing and analysis of the Laboratory of Statistical Research and Data Analysis of the University of Latvia, each physically inactive employee costs the Latvian economy EUR 814.21 per year. The total amount is EUR 41.5 million, which the state budget loses each year due to the decrease in productivity caused by the lack of physical activity. In addition, when looking at the impact on productivity, Latvia loses more than 966 904.291 working days each year due to physically inactive workers (sick leave or absenteeism). Based on the average GDP generated per employee per working day, the decrease in productivity caused by the lack of physical activity costs the Latvian economy 190 million euros. The low level of physical activity is also estimated to cost the healthcare system additional EUR 16.438 million to treat and care the aforementioned diseases associated with lack of physical activity (Deloitte Research, 2023).

### **Physical fitness of the employees of law enforcement agencies and its impact on Latvia's security**

In order to illustrate the overall situation and to highlight the problem mentioned above, the situation is most aptly characterised by the Latvian Health and Fitness Association: "If we do not solve the problem, then in 20 years we will run out of troops for the army, the police, and doctors. We already see that in military service a large number of new recruits lack adequate health condition and physical fitness" (LV portāls, 2023).

Increasing the professional training of the employees of the law enforcement institutions is in line with the direction envisaged in the National Security

Concept, i.e. that it is necessary to further strengthen the capacity of the law enforcement institutions by implementing appropriate human resources policies, including by investing in staff education and professional training (Nacionālās drošības koncepcija, 2019).

Thus, in order for the law enforcement authorities to be able to effectively ensure national and public security, professionally trained staff are needed. Professionalism as a criterion of competence is a complex issue that begins with the selection and enlisting of candidates, basic professional training of new recruits and promotion of professional qualifications (Indrikovs, 2004).

The duties of the police, border guards, army and other services involved in providing security require a high level of psychological and physical preparedness. The Occupational Standard lists specific competencies for performing their duties – good physical fitness, mental balance, adequate health condition, driver's licence. Officers are required to apply tactical methods of attack prevention and protection, to use special means and firearms, to apprehend offenders, etc. (Profesijas standarts, 2022).

Since the professional competence requirements applicable to the officers involved in ensuring security are set at the highest level, it is the duty of the government to create favourable conditions for the provision of professional training and further development of employees, so that they are able to maintain health and physical fitness at the required level for the service.

One aspect attesting to the relevance of the issue is the changes in the security environment over the past decade along with the existing threats and challenges that require the development of professional and well-trained police and army services, with high response capacities and preparedness to protect national and public security. It is equally important to take into account the fact that a number of deficiencies in the professional training have been identified in recent years, which have had an impact on the health condition and level of physical fitness of the law enforcement staff.

Over the past five years, the legislator has reduced the physical fitness requirements twice in Cabinet Regulation No. 288 “Physical fitness requirements for the officials of the Ministry of the Interior institutions and Prison Administration with special service ranks” (last amended on 18 October 2022, Latvijas Vēstnesis, 204, 20.10.2022), since for an extended period of time the recruitment to the interior sector institutions has revealed a high proportion of applicants who are unable to meet the requirements. These amendments were justified by the desire to attract motivated young people to the service, as a reaction to an acute staff shortage both in subordinate institutions of the Ministry of the Interior and in the Prison Administration. The vacancy rate reached 25-30 % in some units, which is likely to negatively impact the quality of the work performance and provision of services.

At the moment, there are no direct indications of the inability to recruit enough young people in the State Defence Service and the National Defence Academy due to their insufficient physical fitness, but as the Chief of the National Armed Forces Recruitment and Selection Centre Major Rihards Rozenbaums has said: “20-25 % of the young people who want to voluntarily join the State Defence Service are likely to fail the selection in the first draft due to health problems” (LETA, 2023).

These conclusions are not merely formal figures but should be regarded as rather serious risk factors. With the deterioration of physical fitness, not only the health condition, productivity, motivation and further education of the security officials suffer, but also the effectiveness of the entire sector may suffer considerable downturn. Undoubtedly, adequate service conditions and environment along with developed sports infrastructure constitute one of the cornerstones of the overall development of the interior and defence sectors. Therefore, in order to ensure the effectiveness of the law enforcement institutions and to develop the professional competences of their staff members, the author proposes more intensive implementation of concrete initiatives at the level of government, parliament, local authorities and institutions, involving all the necessary legal, practical and also political instruments.

### **Conclusion**

All over the world, in Europe, and the Baltic States, the lack of physical activity among all age groups is becoming an increasingly severe problem. With the decline in physical activity, all countries experience an increase in various diseases and conditions, a deterioration in physical health. Today, more and more old age-related diseases are becoming widespread among young people. At the same time, sports studies and sports medicine studies have shown that by properly and regularly performing various physical activities, each person has the opportunity to improve and strengthen their health, maintain high work performance, and agility for a long period.

It is also worth recalling that Latvia's growth and development is impossible without a sustainable and strategic sport policy, which in many respects largely depends on economic, social, legal and political aspects. By studying and analyzing the impact of insufficient physical activity on the national economy and security, the author managed to identify some of the most important problems in the sport sector and to propose the following potential solutions:

1. The concept of sport, which used to focus exclusively on high performance competitive sports, has become much wider today. The theoretical framework and interpretation of the concept of sport in legislation and among the responsible institutions is often different, even ambiguous. Therefore, it is important to reach an agreement on the framework for a modern definition of sport between the

parliament, government, and the responsible institutions, which corresponds to the different target groups of sport policy – children and young people, any individual engaged in physical activity, any individual who has an interest in sports and the related events, high-performance athletes, persons with disabilities, etc.

2. On the basis of the economic and social impact assessment, the author supports the proposal proposed by the Latvian Health and Fitness Association to amend the law “On Personal Income Tax” and the Cabinet Regulation No 336 “On Eligible Expenses for Education and Medical Services” to extend the amount of nontaxable personal income to EUR 600 per year, and the eligible expenses to include gym membership, swimming pool visits, participation in various sports exercises, participation in popular sports competitions, and other sport-related expenses.

These changes will improve the physical health, work performance, and overall well-being of the population. The healthcare system will also benefit by reducing the cost burden associated with the treatment of chronic diseases that can be prevented by engaging in physical activities. Likewise, the revenues in the state budget are expected to grow as a direct result of the health and fitness sector development, and indirectly from all the related economic sectors that have a positive impact on health and fitness sector support functions and the related investments.

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## WELL-BEING AND WORK SPECIFICS FOR FITNESS TRAINERS IN LATVIA

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**Abstract.** *The work-related load can cause serious health issues and discomfort. Ligament and muscle sprains and inflammations, psycho-emotional issues, burnout, and other problems among trainers are not treated in due course and contribute to the inability to work in the future. The profession of a fitness trainer is quite challenging – heavy workload, highly changing environment, noise, the risk factors, high responsibility, high flow of people, high competition, and a relatively low salary. Every day, fitness trainers help others to improve their health and appearance. However, trainers often forget about how much the specifics of their work can harm themselves. Therefore, the purpose of this study is to investigate the work specifics of fitness trainers and how it affects the well-being of trainers in Latvia. An anonymous online survey was conducted to achieve this goal. The survey consisted of 26 closed-ended questions with multiple-choice answers and the possibility to add one's own response option. The survey was divided into blocks, namely qualification and work experience, work specifics and conditions, rest and recovery, and characteristics of well-being. In total, 141 fitness trainers from Latvia participated in the study, of which 92 were women and 49 were men. For data analysis, the SPSS 18.0 software was used for performing mathematical and descriptive statistics. Analysing the obtained results, it can be concluded that fitness trainers in Latvia have a very heavy workload on a daily basis, there is practically no opportunity to rest and recover between the training sessions, there are very few or no days off at all, there is often no time and energy to fully and qualitatively focus on one's own body and physical form, and often there are no regular visits to qualified specialists who could help trainers to improve their own well-being. All of this contributes to the discomfort, pain, and ill health among fitness trainers on a daily basis. Therefore, this issue needs to be addressed at the industry level.*

**Keywords:** *fitness trainers, health issues, injuries, well-being, work specifics.*

### Introduction

The work-related load can lead to serious health issues, musculoskeletal injuries, and related discomfort. Ligament and muscle sprains and inflammations, psycho-emotional issues, burnout, and other issues are not treated in due course and contribute to the inability to work in the future. Furthermore, musculoskeletal disorders are one of the most common work-related health issues among trainers (Malliou et al., 2013a, 2013b; Malliou et al., 2014). Diseases of the musculoskeletal system significantly affect the quality of life for a person, while causing financial losses due to treatment. Sick leaves, absence from work and also

the inability to continue working in the chosen profession are frequent outcomes for people with such health issues (Bonato et al, 2020; Shinde & Sahasrabudde, 2021; George & Abraham, 2022).

In the past 10-15 years, the fitness industry has seen an increase in the number of specialists and clients. People are starting to think more about their appearance and health, and the services have become available to more people. In fitness, one can improve their physical fitness – endurance, muscle and bone strength, mobility, coordination, as well as the immune system, posture and figure. Fitness also provides the opportunity to communicate and spend one's free time actively. Therefore, several insurance companies and workplaces are starting to offer fitness training to their clients and employees.

Nonetheless, the profession of a trainer is quite challenging for everyone involved in this field due to the heavy workload, highly changing environment, noise, the risk factor, high responsibility, high flow of people, high competition, and a relatively low salary (Gjestvang et al., 2021).

Every day, fitness trainers help others to improve their health and appearance. However, trainers often forget about how much the specifics of their work can harm themselves.

Therefore, the purpose of this study is to investigate the work specifics of fitness trainers and how it affects the well-being of trainers in Latvia.

## **Methodology**

In order to study the work specifics of fitness trainers in Latvia and its impact on their well-being, an anonymous developed by current study authors online survey was conducted. In addition, data was collected on the level of qualification, age, and work experience of the trainers. The survey was sent to fitness trainers through social networks and e-mail. The survey consisted of 26 closed-ended questions with multiple-choice answers and the possibility to add one's own response option. The survey was divided into blocks: qualification and work experience, work specifics and conditions, rest and recovery, and characteristics of well-being. In total, 141 fitness trainers from Latvia participated in the study, of which 92 were women and 49 were men. For data analysis, the SPSS 18.0 software was used for performing mathematical and descriptive statistics.

## **Results of the Research**

By analysing the data obtained, it can be concluded that all surveys were valid for further data processing and inclusion in the study. The average age of the respondents was 34 years.

By analysing the respondents' qualifications and work experience in the field, it can be concluded that the largest number of respondents - 47 (34.1%) have



been working in the field for more than 10 years, 19 respondents (13.8%) have been working for less than 1 year, 36 respondents (26.1%) have been working from 1 to 5 years, and 36 respondents (26.1%) have been working from 5 to 10 years. A larger number of respondents have obtained the trainer category B – 22.5%. Nonetheless, there are also trainers with a scientific degree and category B. Furthermore, 24.6% have a Bachelor’s degree, 10.9% have a Master’s degree, and 1 trainer has a Doctoral degree. There were 35.5% of trainers with category C, and there were also trainers with no special education – 6 (4.3%) (see Fig. 1).

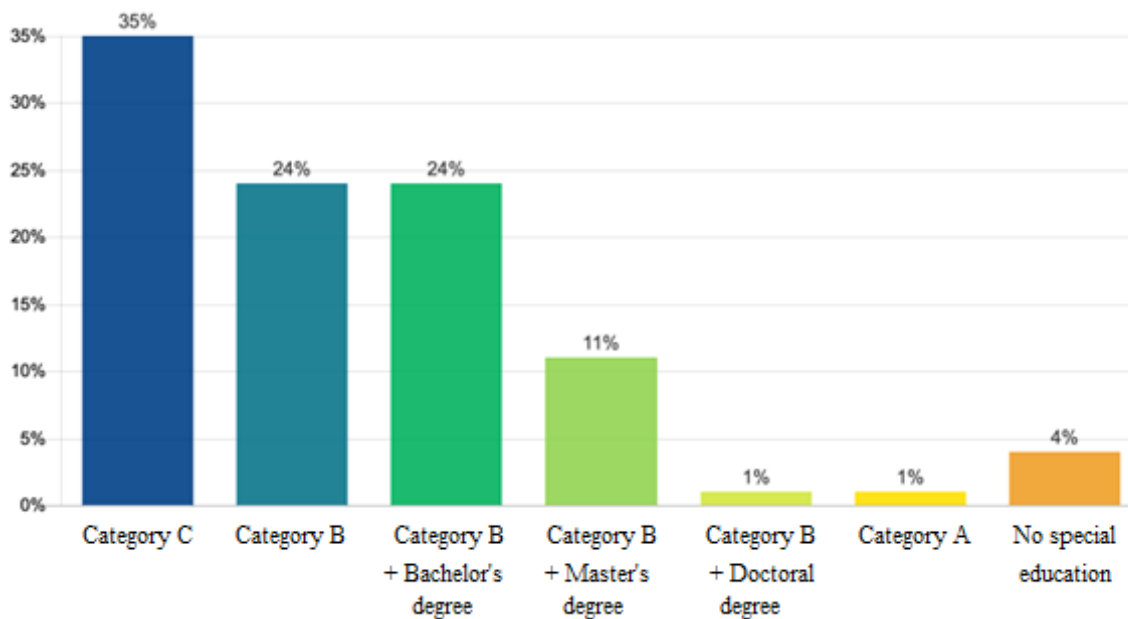
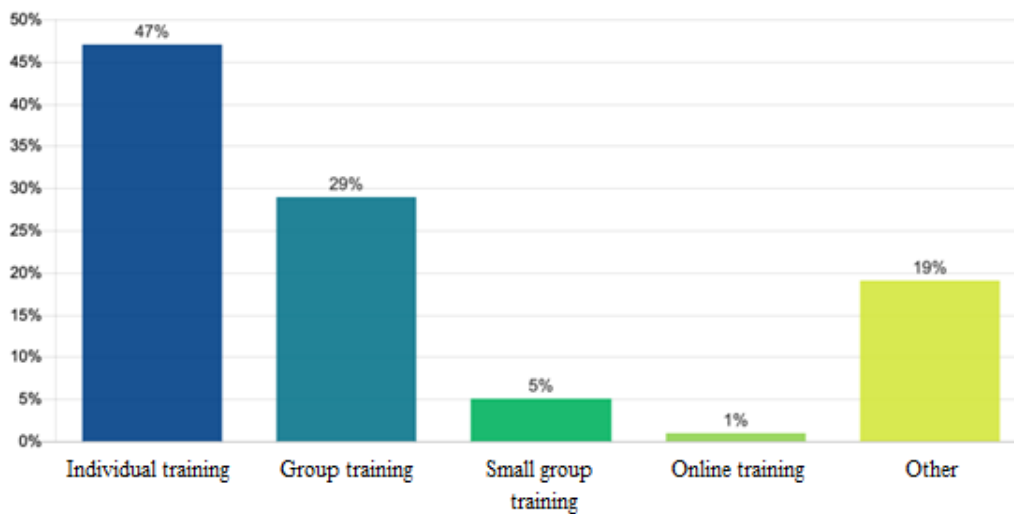


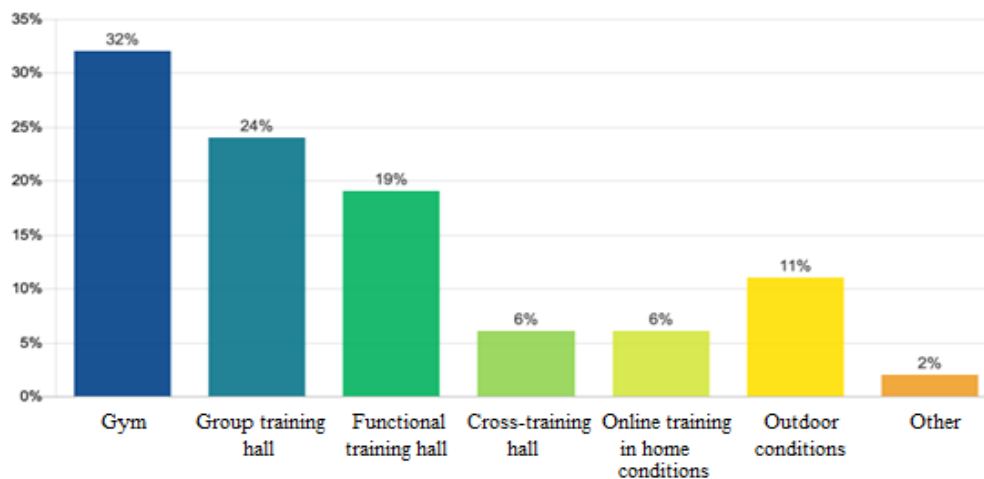
Figure 1 *Qualification of Fitness Trainers*

By analysing the work organization form of fitness trainers, it can be concluded that the largest number of trainers lead individual training (47.8%) and group training (29%) in person. Some coaches lead both individual and group training in person (18.1%). A very small number of trainers lead small group training (4.3%) and online training (5.7%) (see Fig. 2).

The largest number of trainers conduct daily classes in the gym (31.9%). In turn, 23.7% of trainers lead the training in a group training hall, while 19.4% of trainers – in a functional-type hall. Furthermore, 5.7% of trainers lead classes in a cross-training hall, and 5.7% work online from home. Nonetheless, 1 trainer mentioned that they visit clients for the training (see Fig. 3).



*Figure 2 Work Organization of Fitness Trainers*



*Figure 3 Working Environment of Fitness Trainers*

Analysing the working conditions, it can be concluded that almost all trainers have access to high-quality training equipment (90.6%). However, 9.4% of trainers mentioned that they do not have access to high-quality and diverse equipment.

The largest number of trainers conduct strength training (28.1%) and functional training (25.4%) on a daily basis. Cardio training is led by 17.2% of trainers, and training of the body and mind type is conducted by 12.4% of trainers. It was also mentioned that trainers lead trainings such as dance fitness (2.5%), other sports such as boxing, wrestling, and other integrative trainings (8%), and training of the cross-training type (5.2%) (see Fig. 4).

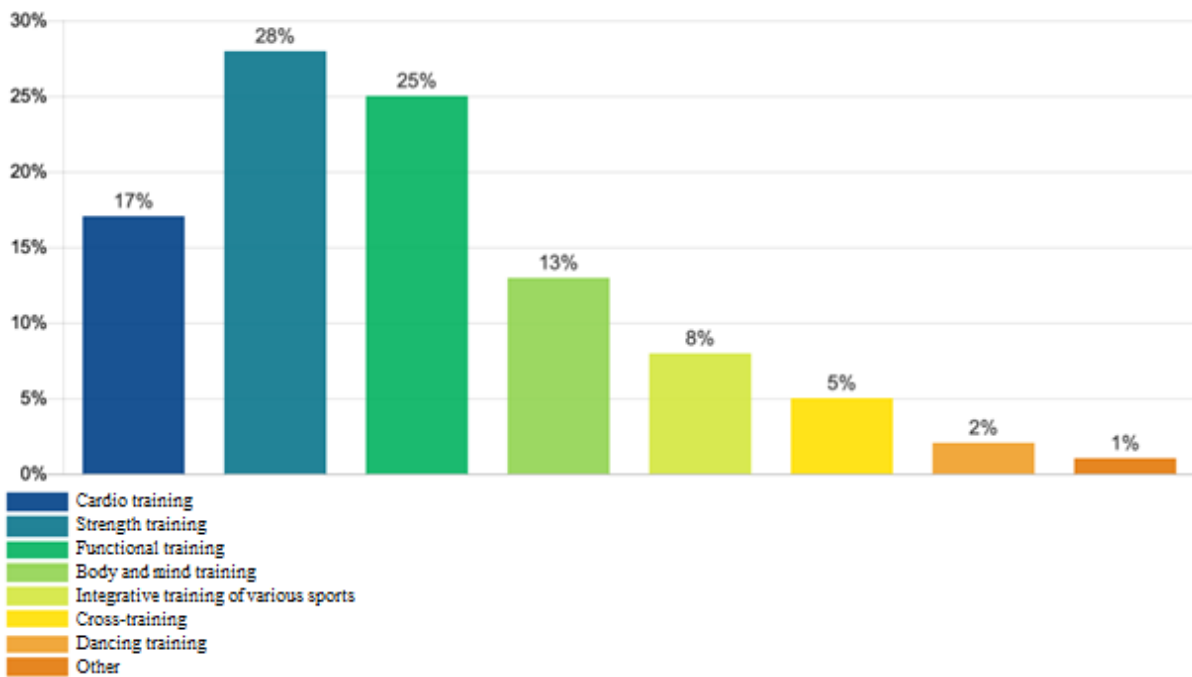


Figure 4 Training Style of Fitness Trainers

By analysing the duration of each training session, it can be concluded that 70.3% of trainers conduct training sessions that last 30-60 min, while 26.1% lead training sessions that exceed 60 min. Moreover, 26.8% of trainers mentioned that they perform tasks together with clients during the training sessions, and 49.3% of trainers sometimes perform tasks together with clients.

By analysing the everyday well-being of fitness trainers, it can be concluded that 26.8% regularly feel discomfort on a daily basis, and 39.1% of trainers sometimes experience it (see Fig. 5).

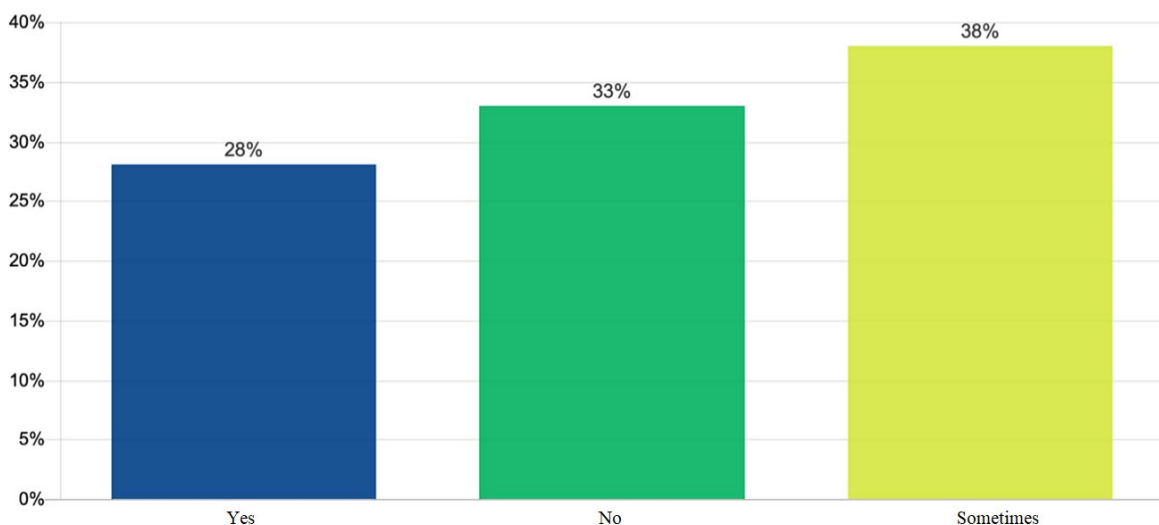


Figure 5 Feeling Discomfort Everyday

The most frequently mentioned discomforts were weakness and fatigue (23.7%), stiffness in the body (12.6%), sleep disorders (12.9%), psycho-emotional tension (12%), burnout (10.8%), and vocal cord overload (7.6%). Furthermore, it was also mentioned that some trainers were experiencing dizziness (2.3%), appetite disturbances (3.5%), shortness of breath (1.4%), muscle cramps (2.9%), and reduced amplitude in the joints (3.5%) (see Fig. 6).

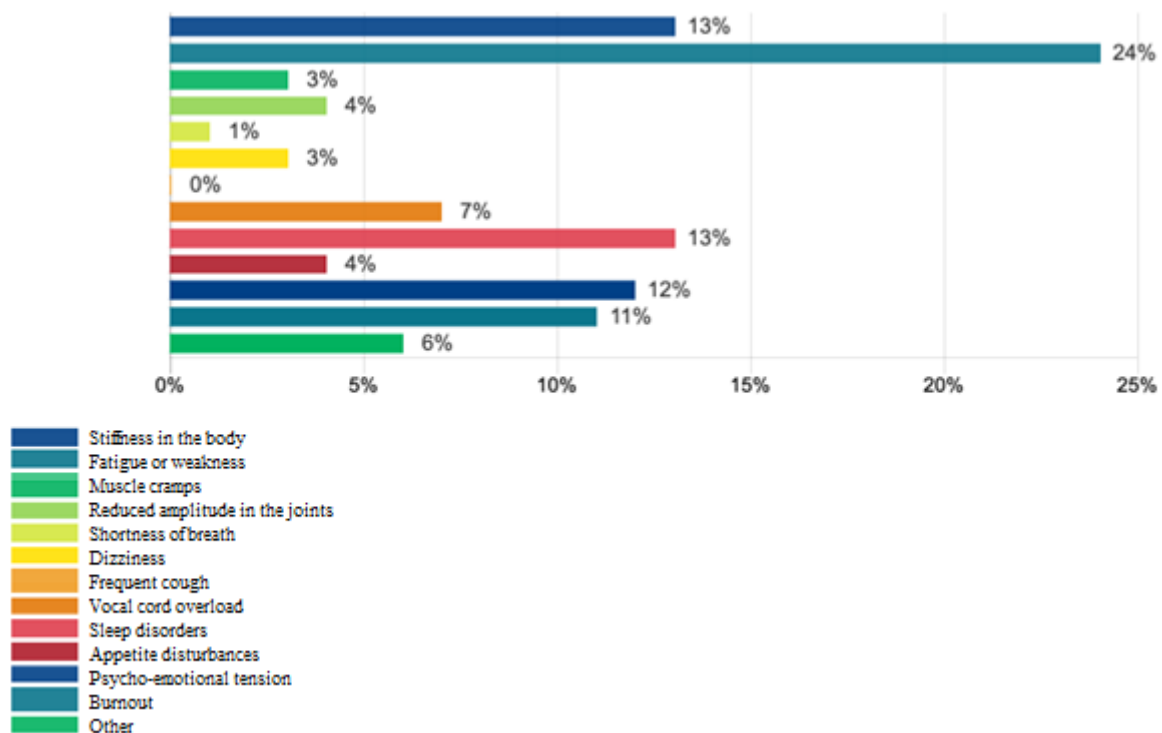


Figure 6 Discomfort of Fitness Trainers

Furthermore, 16.7% of trainers regularly and 42.8% of trainers sometimes feel body aches. The most frequently mentioned body parts where trainers feel pain are lower back (24%), shoulders (13.9%), knees (14.6%), upper back (9.4%), pelvis (7.5%), neck (5.2%), foot (5.2%), palm (4.1%), elbow (2.2%) (see Fig. 7).

Trainers believe that they feel such discomfort and pain due to lack of full-fledged rest (27.3%), due to high daily stress (24.1%), due to heavy workload (19.5%), and due to the high flow of people (12.7%) (see Fig. 8). Moreover, 24% of trainers have a chronic injury, and 9.6% have an acute injury. Furthermore, 25.4% of trainers have had an injury related to work or at the workplace in the last 2 years. In turn, 10.8% of trainers have postural disorders that worsen their well-being at work and in everyday life.

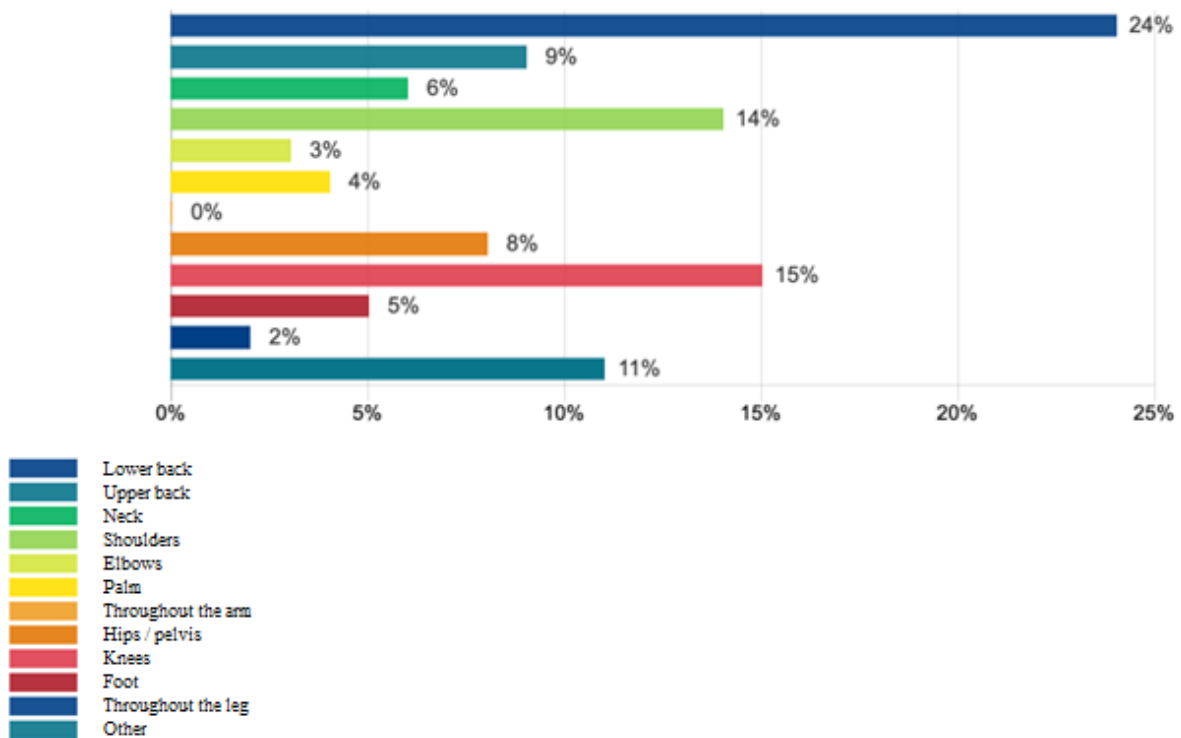


Figure 7 Pain in Fitness Trainers

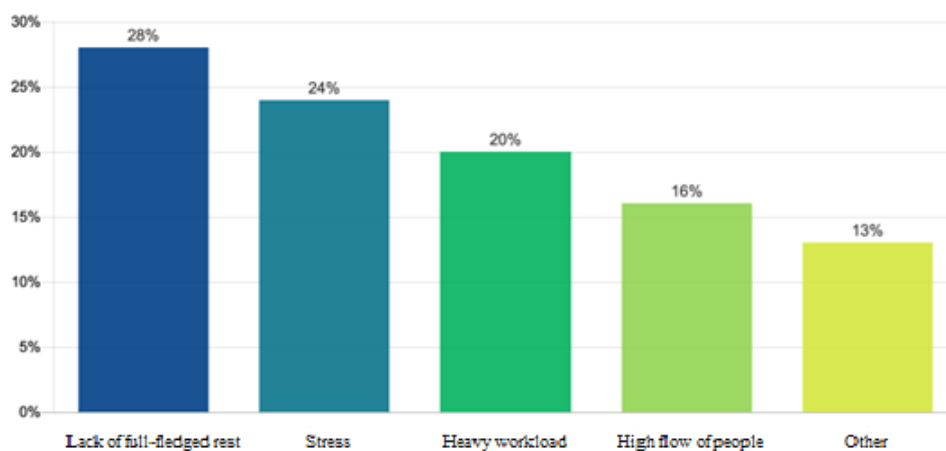
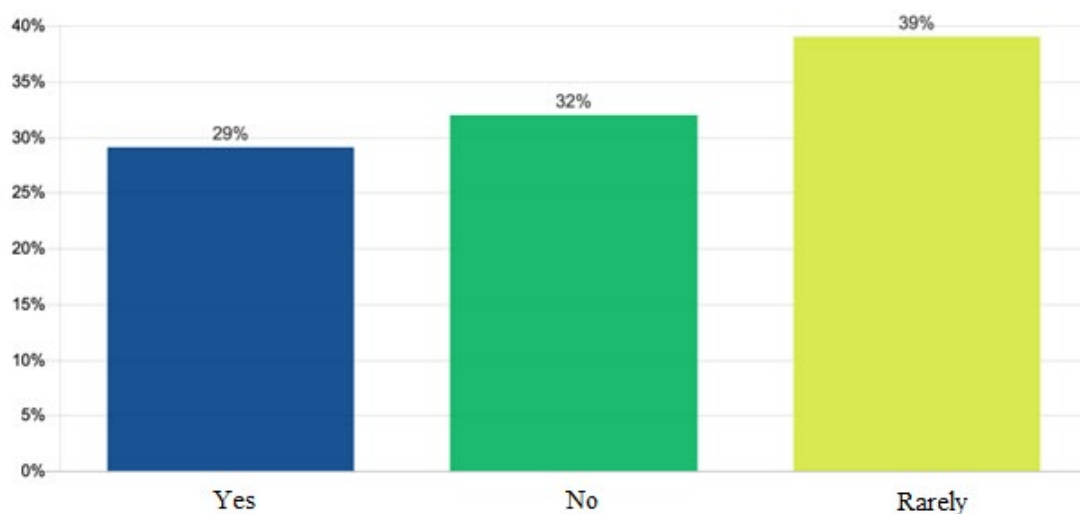


Figure 8 Cause of Pain and Discomfort in Trainers

A large number of trainers have a very high training volume per week, as 39.9% of trainers conduct more than 15 training sessions per week. Furthermore, 20.3% of trainers lead between 10 and 15 training sessions per week, and 26.1% of trainers conduct up to 10 training sessions per week. By analysing the intensity of the trainings conducted, it can be concluded that a larger proportion of trainers conduct medium-intensity training sessions (43.3%). Nonetheless, 28.2% of trainers conduct only high-intensity training, and 26.5% lead only low-intensity training.

Moreover, 30.5% of trainers claim that the workload is too heavy. By analysing the daily rest opportunities of trainers during the workday, it can be concluded that 5.1% of trainers do not have a rest break between training sessions at all, 29.7% only sometimes have the opportunity to rest during the day, and 43.5% have small rest breaks during the day. Furthermore, 56.5% of trainers do not have access to a rest area at their workplace where they could spend time between training sessions. By analysing the number of days off per week, it can be concluded that 5.8% of trainers have no days off at all, 82.6% have 1 or 2 days off, and 11.6% of trainers have 3 or 4 days off per week.



*Figure 9 Do Fitness Trainers Visit a Specialist to Reduce Pain or Discomfort?*

By analysing the actions of trainers to reduce pain or discomfort in the body and to reduce the risk of injuries, it can be concluded that only 28.3% regularly visit a physiotherapist and similar specialists, 32.6% do not visit them at all, and 39.1% visit them very rarely. Furthermore, 14.5% of trainers do not have time and energy to train themselves, 30.4% of trainers sometimes get to train by themselves, and only 55.1% of trainers regularly find time for themselves (see Fig. 9).

## Discussion

This study demonstrates that the high risk of injury and deterioration of well-being among fitness trainers is largely due to the heavy workload and changing environment. For fitness trainers, the salary depends on their work abilities, the amount of work, and the number of hours each trainer spends at the fitness club. That is why trainers are forced to work more than they would like and could afford based on their well-being.

As this study showed, trainers work practically without days off, without a lunch break, and without breaks between clients. All this contributes to discomfort and disorders of well-being, body aches, and also burnout (Gjestvang et al., 2021).

Trainers who work with private clients often show exercises without warming up, and support the client in exercises with high resistance without thinking about their own body position. Trainers also move heavy equipment several hours a day, and are in an uncomfortable position for a long time. They also have no time and energy to fully exercise and harmoniously develop their own body (Shinde & Sahasrabuddhe, 2021).

The study also showed that many fitness trainers perform very heavy loads, perform exercises with groups for several hours a day, talk loudly during exercises, do not breathe properly, and motivate, supporting, and working with loud music (Klimek et al., 2018).

Trainers work in several workplaces, and after the training, they run in a hurry, sweaty and tired. Only in the evening do they realize how much fatigue has been in the background throughout the day.

Moreover, the societal pressure on fitness trainers is enormous. Trainers are dictated how to look, how to eat, and how people are allowed to behave in order to promote a healthy lifestyle. However, trainers are in a risk group because they have very little time for themselves (George & Abraham, 2022).

Many fitness instructors lack knowledge about how to organize their work to reduce risks, what injuries and illnesses can occur, what to do when an issue has already occurred, what is the prevention of injuries and illnesses. Furthermore, trainers also do not treat injuries for a long time, go to work during illnesses, and do not pay attention to their posture, focusing more on their clients.

Research show that injuries among trainers depend on the specifics of training and workload. Very often strength and resistance trainers complain of lower back pain and knee joint injuries (Bonato et al, 2020; Shinde & Sahasrabuddhe, 2021; George & Abraham, 2022). At the same time, high-intensity cardio trainers complain more about hip injuries and also knee injuries (Bratland-Sanda et al., 2015; Klimek et al., 2018; George & Abraham, 2022). Studies have found that such health issues in the representatives of these trainings begin due to the monotonous repetitive activity in training. In turn, research on the training type “CrossFit” or “cross-training” show that traumatism is greater and more serious among the trainers of this direction than in Olympic weightlifting, short-distance running, rugby, and sports gymnastics (Bratland-Sanda et al., 2015; Klimek et al., 2018; George & Abraham, 2022). Many trainers do not warm up or cool down after training, quickly perform the exercises of the main part of the training between clients, and continue working.

## Conclusions

By analysing the results obtained, it can be concluded that fitness trainers in Latvia also have a very heavy workload on a daily basis, practically no opportunity to rest and recover between training sessions, very few or no days off at all, often lack the time and energy to fully and qualitatively focus on their own body and physical form, have no opportunity to visit qualified specialists who would help to improve their well-being. All this contributes to discomfort, pain and well-being disorders in the daily life of fitness trainers.

This issue needs to be addressed at the industry level, by raising the salary of trainers, and organizing seminars on work environment and work organization in fitness clubs and other places where trainers conduct training sessions. There is also a need to develop guidelines for implementing optimal maximum work volumes in the field of fitness. This will help trainers to work less, but with better quality, without harming their health.

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# COMPUTER VISION TECHNOLOGIES FOR HUMAN POSE ESTIMATION IN EXERCISE: ACCURACY AND PRACTICALITY

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**Abstract.** *Information technologies are increasingly being integrated into all aspects of human life. Over the past few years, the use of machine learning models for human pose detection has significantly increased. As the realms of technology and physical activity converge, understanding the potential of these innovations becomes imperative for refining exercise monitoring systems. The aim of the research - evaluate the accuracy and viability of employing modern computer vision technologies in the identification of human pose during physical exercises. The study employed a combination of machine learning methods, video analysis, a review of scientific literature, and methods from mathematical statistics. The precision evaluation of contemporary machine learning models was conducted on a prepared dataset, comprising annotated images featuring students executing a body balance test with the camera positioned directly towards the subjects. The obtained data showed that both MediaPipe and OpenPose models proficiently recognize key anatomical landmarks during the conducted test. The MediaPipe model demonstrates a lower percentage of deviation from manual annotation compared to OpenPose for most key points: the mean deviation exceeds the threshold for 11 out of 15 key points and 7 out of 18 key points, as defined by the OpenPose and MediaPipe models, respectively. The most significant deviations are noticeable in the detection of points corresponding to the foot and wrist. The derived conclusions underscore the models can address only a portion of the tasks set. Essentially, this raises scepticism regarding the practical application of contemporary machine learning methods for human pose estimation without additional refinement.*

**Keywords:** *accuracy, balance test, computer vision, pose estimation, student.*

## Introduction

In an era marked by unprecedented advancements in technology, the intersection of computer vision and human physical activity has emerged as a focal point of research. As we witness a surge in the integration of smart technologies into various aspects of our lives, the synergy between modern computer vision technologies and the evaluation of human pose during exercise stands out as a consequential domain (Andriluka, Pishchulin, Gehler & Schiele, 2014; Beddiar, Nini, Sabokrou & Hadid, 2020). The Covid-19 pandemic, along with the shift of a portion of specialists to remote work formats, has only contributed to the development of this industry (Channa, Popescu, Skibinska & Burget, 2021).

The effective execution of physical exercises and control plays a pivotal role in sport and public health. While understanding and optimizing human movements during physical activity hold a central position in sports training and fitness sessions (Weinberg & Gould, 2019; Latyshev et al., 2021; Dindorf, Bartaguiz, Gassmann & Fröhlich, 2022). Modern computer vision technologies offer avenues for augmenting this comprehension, endowing the capability to dynamically scrutinize and interpret the subtleties inherent in human pose (Chung, Ong & Leow, 2022). A plethora of diverse open-source models is at disposal for addressing general human pose estimation objectives. However, a question arises regarding the accuracy, practicality, and reliability of contemporary machine learning models when employed without prior preparation.

*The aim of the research* – evaluate the accuracy and practicality of employing modern models of computer vision in the identification of human pose during physical exercises.

The study employed a combination of machine learning methods, video analysis, a review of scientific literature, and methods from mathematical statistics.

## Literature review

Remarkable advancements have transpired in the field of information technology, concurrently permeating the domains of sports, physical exercises, and health (Cook, Burton, Hoogenboom & Voight, 2014; Carlson et al., 2020; Badiola-Bengoa & Mendez-Zorrilla, 2021). The progression of artificial intelligence, encompassing deep learning and computer vision, has forged pathways towards innovative applications. Utilizing advanced image processing methods, Computer Vision enables the extraction of valuable information from visual data, offering new possibilities to enhance performance, monitor health, and optimize training programs (Thomas, Gade, Moeslund, Carr & Hilton, 2017;

Zhu, 2021; Khanal et al., 2022). Working with statistical data in sports also remains an important aspect (Sainani et al., 2020; Latyshev et al., 2020).

Presently, Computer Vision technologies find applications across diverse spectra, encompassing the tracking of movements, both collective and individual, in team sports (Cioppa et al., 2020); the contemporaneous monitoring of athletes' performance (Citraro et al., 2020); body position tracking to prevent injury (Blythman et al., 2022); and the analysis of motion patterns during rehabilitative physical exercises as well as fitness activities (Rahmadani, Dewantara & Sari, 2022). Particular attention is merited for the domain encompassing the the human pose estimation during physical exercises (Andriluka, Pishchulin, Gehler & Schiele, 2014).

With the integration of machine learning, the field of posture assessment has undergone significant transformation. Over the past years, this domain has experienced rapid development, and currently, there exist a considerable number of different models for human pose estimation (Chung, Ong & Leow, 2022). Despite the remarkable accuracy attained by contemporary methodologies, immediate practical applicability remains encumbered (Pardos, Tziomaka, Menychtas & Maglogiannis, 2022).

The majority of research is aimed at monitoring and correcting specific movements using human pose estimation. Additionally, there are studies focused on overseeing the execution of comprehensive exercises (Wang, Qiu, Peng, Fu & Zhu, 2019). It is pertinent to highlight the existence of alternative methodologies within information technologies for the assessment of human pose during exercises (Hutagalung, Akhmad & Irfan, 2023). The ability to maintain body balance plays a crucial role both in everyday life and in athletes' fitness levels (Bohannon et al., 1984; Bogle Thorbahn, Newton, 1996; Kaupuzs, Larins & Rizakova, 2016). The automation of balance control is a relevant task at present.

## Methodology

*The participants.* Fourteen students, aged between 18 and 20, enrolled in the Faculty of Health, Physical Education, and Sports, were recruited for this research. Voluntary informed consent was obtained from all participants prior to their inclusion in the study. The experimental procedures adhered rigorously to universally acknowledged ethical norms and guidelines. The permission for conducting research with students is indicated in protocol 9 from the department meeting held on the 31st of August, 2023. All participants exhibited prior engagement in sporting activities. The designated task for the participants encompassed the execution of the Standing Stork Test, occasionally referenced as the Balance Stork Test (Kranti Panta, 2015; Lengkana et al., 2020; Hutagalung, Akhmad & Irfan, 2023). Detailed instructions and a video presentation were provided in advance, allowing participants to practice beforehand. Each

participant was afforded a single attempt to achieve their maximal individual performance.

The procedural algorithm involved participants autonomously selecting a lower extremity (either right or left) for the test and assuming a biomechanically advantageous standing position. With hands placed on their hips, participants fixed the foot of one leg around the knee of the other, subsequently elevating onto the toes of the supporting leg, thereby disengaging the heel from the supporting surface. The primary objective was to sustain equilibrium in this position for maximal temporal duration. The temporal parameter, indicative of the duration until a balance perturbation occurred, was meticulously measured.

*The video analysis.* The execution of the exercise was recorded using Pixel 7 smartphones, leveraging the rear camera of the devices (50 MP Octa PD Quad Bayer wide camera). The camera of smartphone was chosen to approximate the video quality to a publicly accessible standard. The smartphone was securely affixed to tripods positioned anteriorly to the participants. During video registration, the smartphone camera was positioned at a height of approximately 1.5 meters above the sports hall surface. The distance from the camera to the student was around 5 meters.

All video segments were converted into images with a frame rate of 25 frames per second (fps). The resultant dataset comprised a total of 7036 images. For the specific purpose of annotating key body points and subsequent model accuracy evaluation, a random subset of 40 images was sampled from each video (560 images total).

*The machine learnings methods (Computer Vision).* In the domain of image processing, precision computation, and statistical analysis, the Python programming language served as the computational framework. The identification of anatomical landmarks was carried out through three methods: manual annotation and two machine learning approaches. It is pertinent to clarify that the pose estimation within an image is conducted in an ostensibly static state (captured at a discrete moment in time). Although it is understood that the student is performing a physical exercise and this is a dynamic action.

The dataset was meticulously annotated using the Computer Vision Annotation Tool (CVAT). This manual annotation process ensured precise labeling of key body joints and parts, forming the ground truth for model evaluation. The sequence of execution was as follows: initial point annotations were executed by one expert, with a subsequent verification process conducted by a second expert. Disputes or ambiguities were adjudicated through the informed judgment of a third expert.

The utilization of machine learning models, specifically MediaPipe and OpenPose, was undertaken to automate the inference of pose estimation. It is worth noting that, today, a sufficient number of models for Pose Estimation exist. These particular models were chosen due to their availability.

MediaPipe, a popular machine learning library, provides a robust solution for pose estimation (Kim, Choi, Ha & Choi, 2023; Mahmood, 2023). Its key strengths lie in its real-time performance and versatility. OpenPose is another widely used pose estimation model known for its accuracy and ability to handle complex body poses. OpenPose's open-source nature allows for flexibility and customization (Cao, Simon, Wei & Sheikh, 2017; Li, Chang, Cheng & Huang, 2021).

For each selected image earmarked for analysis, specific body key points were identified: 20 points were manually annotated, 33 points were determined utilizing the MediaPipe model, and 19 points were discerned using the OpenPose model. Notably, 14 key points exhibited congruence across all three methodologies (Left Eye, Right Eye, Left Shoulder, Right Shoulder, Left Elbow, Right Elbow, Left Wrist, Right Wrist, Left Hip, Right Hip, Left Knee, Right Knee, Left Ankle, Right Ankle). Anatomical points that were manually marked were placed in the area of the joint, at points where rotation (turn) of the anatomical part of the body occurs (Robertson, Caldwell, Hamill, Kamen & Whittlesey, 2013). Identifying the precise axis of rotation presents a formidable challenge, compounded by multifarious factors such as clothing, camera perspective, among others. However, to enhance the precision of this marking, the process was carried out by three experts.

*The mathematic and statistic methods.* Model accuracy was determined by assessing the deviation between points generated by the model and manually set points. The differences were quantified as the Euclidean distance in a two-dimensional space between the coordinate sets of the respective points. Following this, both the mean and standard deviation were computed for all values associated with each key point. For enhanced perceptibility of the data, all differences were proportionally converted into a percentage of the participant's height (the difference was divided by the participant's height on the manually annotated image; height was measured as the distance from the apex of the head to the heel on the manually annotated image).

## Research results

The illustration portrays a frame capturing the execution of the Stork Standing Test by a student. The student adheres to the initial posture, with hands placed on the hips, and one foot securely positioned atop the other near the knee. Three frames of the student in the same position are presented in the illustration (from left to right): the first frame is annotated with manually marked anatomical points; the second frame includes points determined using the MediaPipe model; the third frame incorporates points obtained through the OpenPose model (Fig. 1).



*Figure 1 A Visual Evaluation of Pose Estimation Models in Stork Standing Test: Annotated Manually, MediaPipe Model and OpenPose Model*

A comparative analysis of anatomical landmarks, manual annotation, and the outcomes of MediaPipe and OpenPose models furnishes information regarding the accuracy and consistency in assessing the student's posture during the execution of the exercise. The identification of key points through diverse methods highlights the nuanced advantages and limitations intrinsic to each approach, thereby enriching the discourse on the reliability and applicability of these computational models within this specific domain. A visual comparative analysis reveals a more precise outcome from the MediaPipe model compared to the OpenPose model.

The next step, was the analysis involved scrutinizing the performance of the MediaPipe algorithm with a dynamic subject (Fig. 2). A specific two-second interval, encapsulating the initiation of the test marked by a rise onto the toes, underwent examination. Key points from subsequent frames were overlaid onto the initial frame to illustrate the movement of all key points (excluding those associated with the head).

Key points annotated within a two-second temporal window from the commencement of the test exhibit a discernible trajectory. Evidently, a predominant upward displacement of key points is discernible, signifying the elevation of the entire body, notably accentuated at the shoulder, hip, elbow, wrist, and knee positions. Post-elevation, a directional shift towards the upper thoracic region is observable, indicative of an adaptive mechanism aimed at preserving bodily coordination. Conversely, the key points corresponding to the ankle, heel, and proximal phalanx of the hallux lack a clearly defined trajectory, aggregating

into a diffuse cluster. Within this cluster, the detection of a discernible movement trajectory becomes inherently intricate.



Figure 2 Dynamics of Stork Pose Initiation: Annotated Key Points Analysis

Table 1 Analyzing Differences: Model-Predicted and Manually Annotated Key Points

Key points of body	The percentage difference of model-predicted key points from manually annotated key points, X±SD	
	MediaPipe, %	OpenPose, %
Left Eye	1.68 ± 1.13	3.02 ± .48
Right Eye	1.67 ± 1.03	2.64 ± .69
Left Shoulder	1.61 ± .94	4.64 ± 1.21
Right Shoulder	2.12 ± 1.13	3.13 ± 1.84
Left Elbow	3.35 ± 1.57	8.12 ± 4.08
Right Elbow	2.10 ± 1.27	5.07 ± 3.17
Left Wrist	5.62 ± 3.69	8.60 ± 3.63
Right Wrist	4.12 ± 2.97	7.85 ± 2.56
Left Hip	2.54 ± .98	3.91 ± 1.84
Right Hip	2.99 ± 1.29	5.85 ± 2.56
Left Knee	2.68 ± 1.90	4.90 ± 1.28
Right Knee	1.95 ± 1.06	2.76 ± 1.72
Left Ankle	4.92 ± 2.98	9.60 ± 4.08
Right Ankle	2.53 ± 1.46	3.97 ± 1.60



For the assessment of accuracy and subsequent analytical endeavors pertaining to the models, the displacement between model-predicted points and manually annotated points was quantified. The resulting data is expressed as a percentage relative to the stature of the participant (Table 1).

The table presents data for information pertaining to key anatomical landmarks concurrently identifiable in both models. However, an additional analysis was conducted with certain key points that align exclusively with a specific model. The MediaPipe model: Left Heel ( $6.05 \pm 3.92$  %), Right Heel ( $3.02 \pm 1.81$  %), Left Foot Index ( $6.96 \pm 3.87$  %), Right Foot Index ( $4.36 \pm 2.93$  %). The OpenPose model: Neck ( $5.08 \pm 1.76$  %).

## **Conclusions and Discussion**

Presently, the pervasive integration of information technologies encompasses a broad spectrum of human endeavors. Moreover, their application is expanding in the domains of sports, physical exercises, and health, posing specific challenges to the professionals in these fields. The continuous advancement of artificial intelligence and machine learning further contributes to the transformation of approaches within these industries (Thomas, Gade, Moeslund, Carr & Hilton, 2017; Zhu, 2021).

In this study, we sought to assess the practical feasibility of utilizing open-access machine learning models for monitoring the execution of physical exercises. Some scholars contend that direct utilization of models is challenging, necessitating additional refinement (Carlson et al., 2020; Pardos, Tziomaka, Menychtas & Maglogiannis, 2022; Khanal et al., 2022). Our findings align with these perspectives, indicating the models' capacity to address only a subset of the stipulated tasks. The margin of error extends up to 10.0% of human height for certain points, a considerable deviation. In prior research (Rafi, Leibe, Gall & Kostrikov, 2016), a 3.13% (8/256) deviation is conventionally accepted as the threshold for acceptable accuracy.

Upon data, it becomes apparent that both MediaPipe and OpenPose models proficiently discern key anatomical landmarks during the administered test. However, disparities in accuracy exist, and it is crucial to consider them when interpreting the results. The MediaPipe model demonstrates a lower percentage deviation from manual annotation compared to OpenPose for the majority of key points. The advantages of the MediaPipe model are further substantiated in other studies (Chung, Ong & Leow, 2022; Kale, Kulkarni, Kumbhkarn, Khuspe & Kharde, 2023). The computed mean deviation surpasses the defined threshold for more than 70% of points (eleven key points) ascertained by the OpenPose model and over 30% of points (seven key points) by the MediaPipe model. Foremost deviations are discernible in the detection of points corresponding to the foot (ankle, heel, foot index) and wrist. Concurrently, the range of errors associated

with key anatomical landmarks, such as eyes, shoulders, hips, and knees (1 to 3%, MediaPipe), is smaller compared to other key points.

Examination of data pertaining to right and left sides of the human body reveals some differences in the accuracy of model predictions. Our interpretation posits that this phenomenon is contingent upon the predominant selection of the right leg as the supporting limb by the majority of participants, an aspect unrelated to peculiarities in model functionality.

The Stork Test exercise consists of several phases. The initiation of an exercise execution is identifiable through specific anatomical landmarks. However, precise tracking of the participant's pose during execution and completion (balance loss) of the exercise proves to be a challenging task. Some key points in identification exhibit relatively high imprecision, forming a distinct point cloud (Fig. 2) that requires additional scrutiny (Hellsten, Karlsson, Shamsuzzaman & Pulkkis, 2021).

A salient consideration lies in acknowledging the imperative nature of interdisciplinary collaboration. In general, Pose Estimation models play a crucial role in automatically determining the body's spatial position. However, the accuracy and reliability of these models can be significantly enhanced through collaborative efforts of specialists. Their expertise and experience are essential for a deeper understanding of movements and postures, which can contribute to optimizing the performance of Pose Estimation models in various contexts, including sports and physical exercises. The collaborative efforts of professionals from computer science, data sciences, biomechanics, sport, physical exercises and health are pivotal in shaping accurate, efficient, and practical solutions for the benefit of individuals engaging in physical activities.

Prospective ways of our research converge toward the conceptualization and realization of an application for monitoring human body balance using a machine learning model, enabling individuals to autonomously track their progress. This will enable the practical use of this method, as well as assess the accuracy of this method and compare it with other similar methods.

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# EXPANDING THE ROLE OF EDUCATION IN EATING DISORDER PREVENTION: THE ROLE OF A SOCIO-CULTURAL APPROACH

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**Abstract.** *The research on eating disorder (ED) prevention, evolving since the mid-1990s has primarily focused on medical and psychiatric perspectives, emphasising diagnosis and treatment. At the same, there is a growing recognition that prevention efforts, despite their critical importance, are underrepresented in academic literature. This study aims to promote a more holistic approach, integrating education as a pivotal socio-cultural factor in ED prevention. The study delineates a shift from a predominantly medical model to a more inclusive socio-cultural framework. It stresses the need for interdisciplinary collaboration and emphasises the critical role of educational strategies in the broader context of ED prevention. The aim of this article is to conduct a review of the scientific literature in order to provide a clearer picture of general research trends and paradigms in ED, and to expand the role and relevance of ED prevention in an educational context. While acknowledging that social environments including micro, meso, macro systems influence the development of ED, this paper focuses on the meso environment, highlighting the importance of schools and school professionals in preventing ED.*

**Keywords:** *eating disorder prevention, education, educational activities, socio-cultural approach, social constructs*

## Introduction

Eating disorders (ED) are a complex and often difficult-to-treat mental illness that manifests itself in both emotional and physical symptoms. Despite advances in treatment, mortality rates for anorexia nervosa and bulimia nervosa remain not only very high (van Hoeken & Hoek, 2020), but are the highest of all mental health disorders (Gibson, Workman & Mehler, 2019), with relatively low rates of successful treatment and recovery (Pike & et al., 2023). Various data suggest that the prevalence of anorexia nervosa, bulimia nervosa and binge ED is on the rise (Lindvall Dahlgren, Wisting & Øyvind, 2017). It is also worrying that ED symptoms increased by more than 50% during the COVID-19 pandemic (Schafer, Lieberman, Sever & Joiner, 2022).

And while ED can develop at different ages, research shows that young people, including children and adolescents, are at higher risk of developing them (Saul & Rodgers, 2018). The peak period of onset of ED has been found to be between the ages of 16 and 19 years (Rohde, Stice & Marti, 2015). Middle and

late adolescence is a developmental period when non-weight-related environmental risk factors and weight-related peer bullying have a greater impact on the young person's life (Fairweather-Schmidt & Wade, 2015). A study conducted nearly twenty years ago by German researchers Berger, Schilke, Strauss (2005) with adolescents aged 14-18 in Thuringia showed that 53% of girls and 42% of boys prioritised the ideal of a slim body, 32% of children of normal weight (based on BMI) stated that they wanted to be slimmer, and 17% of children of normal weight believed they were overweight. A decade after the survey data was published, the *German Federal Centre for Health Education* (2015) reported the ominous statistic that more than half of German children aged 13-14 years would like to be slimmer. It found that boys' eating behaviour was most influenced by parental criticism, girls' by peers, and that the media proved to be a strong influence on both genders.

Moreover, a systematic review by Tatangelo, McCabe, Mellor & Mealey (2016) highlighted that around half of the children in studies between the ages of 6 and 12 are dissatisfied with their bodies, and that children as young as five years old experience weight problems and problems with ideal body types. This confirms that increasing the role of education in the prevention and intervention of ED is essential, including both school and pre-school prevention methods, to reduce the prevalence of eating disorders in the population.

The aim of this article is to conduct a review of the scientific literature in order to provide a clearer picture of general research trends and paradigms in ED, and to expand the role and relevance of ED prevention in an educational context. While acknowledging that social environments including micro, meso, macro systems influence the development of ED, this paper focuses on the meso environment, highlighting the importance of schools and school professionals in preventing ED.

## **Literature review**

### *Medical approach*

ED prevention research, developing since the mid-1990s, has focused on medical and psychiatric perspectives, with emphasis on diagnosis and treatment. Historical, retrospective bibliometric analyses of ED studies by Park & Kim (2022), Almenara (2022), Shah, Ahmad, Khan & Sun (2022), covering the last 40 years, highlighted that the diagnosis, epidemiology, course and outcome of ED are the priority components of ED research, and that the majority of the most highly-cited papers were related to either the development of assessment instruments or the course and outcome of ED.

The topic modelling studies carried out by these researchers showed that in the scientific discourse on ED, the majority of citations are in the fields of

psychiatry, psychology, and dietetic nutrition research, while behavioural and social sciences, including social work and education, are still under-represented. There is also an intense interest in treatment outcomes, and it is likely that future studies may use digital interventions and machine learning algorithms to improve treatment planning.

On the other hand, the researchers' topic modelling studies have led to significant changes. Since the early 1970s, research on risk factors for ED has taken on an increasingly prominent role alongside the dominance of clinical group studies. This could therefore be seen as a sign of a growing interest in the prevention of ED, rather than in their treatment alone. According to Levine & Smolak (2020), this result reflects a historical shift that took place in the United States when the *Institute of Medicine (IOM) Committee on the Prevention of Mental Disorders* was established in 1992. And while ED prevention is still critically under-emphasised in comparison to the active dominance of clinical psychiatric approaches, it highlights important socio-cultural attitudes that allow us to discern changes in and expand the scope of ED prevention and interventions.

### *Socio-cultural approach*

The aetiology of EDs, in other words, the causes of their onset, involves a number of factors, among which genetic, psychological and environmental components play a particular role (Mitchison & Hay, 2014). Currently, two approaches dominate in the research on the aetiology of ED: biopsychiatric and sociocultural. The main elements of the biopsychiatric approach are based on the assumption that ED are biologically based mental illnesses, whereas Insel (2009) argues that biological causes are the only reasonable way to explain the debilitating, self-sustaining processes of anorexia nervosa and bulimia nervosa. Kaye, Bailer & Klabunde (2012) complement the biopsychiatric approach with the assumption that character traits are genetically determined forms of temperament, and neurological vulnerabilities together with genetic temperament form the basis of the biopsychiatric aetiological approach.

Meanwhile, sociocultural attitudes focus on multiple social messages about gender, ethnicity, and body shape, which help to explain why certain social groups may be at higher risk of developing ED (Levine & Smolak, 2006, 2010). The sociocultural perspective encompasses a number of theories that emphasise various sociocultural mediating factors. For example, in addition to the internalization of the thin ideal and the social comparison bias (Keery, van den Berg & Thompson, 2004), there are cultural-historical forces that shape women's experiences of power, freedom and sexuality (Nasser & Katzman, 1999), gender roles and developmental changes (Smolak & Murnen, 2004), acculturation and individual identity (Becker et al, 2010), the influence of social development on

the experience and expression of embodiment or non-embodiment (Piran & Teall, 2012), and gender and ethnic differences in ED (Smolak & Piran, 2012). It is important to note that in this context, the media, social media, the fashion industry, peers and other indirect processes can be considered as mediators, which lead to social comparison, the internalisation of the thin ideal and are essential components of sociocultural patterns.

According to Levine & Maine (2010), it is not appropriate to ignore the importance of sociocultural perspectives in research, clinical work and ED prevention. The authors emphasise that a sociocultural approach that includes an interdisciplinary, scientific perspective has a significant empirical basis. Subsequent research by Levine & Smolak (2010) has promoted the recognition that the biopsychiatric perspective shares common ground with the sociocultural perspective and the need to consider combining these perspectives in the field of eating disorders, with careful work on methodology and interdisciplinary collaboration.

We observe the shift from a clinical to a sociocultural understanding of ED by recognising the different levels and signs of risk for ED in relation to sociocultural factors and characteristics such as gender, age, sexual orientation, race, etc. However, there is a clear lack of explanation of these factors and a lack of new concepts that not only address ED and their consequences, but also develop ED education, prevention and intervention. There is a lack of interdisciplinary approaches that would help to develop effective practical approaches.

### *Role of education in ED prevention*

Although the critical importance of educational prevention and intervention for ED is recognised, this approach is underrepresented in the academic literature. It is clear that research on preventive interventions accounts for only a small proportion of published studies in the scientific literature. A study by Austin (2012) found that in the main scientific journals in the field of eating disorders, the *International Journal of Eating Disorders* (IJED) and *Eating Disorders: The Journal of Treatment and Prevention* (EDJTP), of the total number of articles published between 2005 and 2010, research on preventive interventions accounted for only 3% in the IJED and only 8% in the EDJTP. The study reveals that, in both journals, more than half of the articles were devoted to the diagnosis, treatment, and course of the disease. This imbalance suggests that prevention is given very little attention in the field of ED.

Thus, if the focus on ED continues to be on treatment, with little attention to the importance of prevention and interdisciplinary collaboration, according to Cooper & Bailey-Straebl (2015), it is likely that it will be difficult to move towards stemming the tide of eating disorders in the future with a *detect-it/treat-*



*it approach*. Therefore, if the ED field were to refocus scientific attention and resources on prevention research to promote a holistic approach, integrating education as a key socio-cultural factor in the prevention of ED, it is likely that the effectiveness of tackling ED would be significantly improved.

In the early 20th century, Wade, Davidson & O'Dea (2002) highlighted education as the first and one of the most important steps in contributing to the reduction of risk factors for ED and the increase of protective factors. Bardick et al. (2004) argued that preventive education should not only focus on the signs and symptoms of ED, healthy eating, regular physical activity, but should also focus on critical thinking skills, targeting risk factors such as low self-esteem, self-worth etc. Kater, Roher & Londre (2002) observed in a study that the use of prevention programmes in grammar or secondary schools is rather delayed in achieving effective results. In other words, ED prevention education should start from pre-school age. Otherwise, ED prevention education that starts in adolescence is likely to have less impact on the views and attitudes of an already formed adolescent.

ED prevention and intervention programmes in educational institutions are necessary. There is evidence that educating individuals about ED can have a positive impact on addressing the symptoms of ED, including internalisation of the thin ideal, body dissatisfaction, dieting, and negative affect, etc. Reviews by Stice, Shaw & Marti (2007) found that 51% of the included prevention programmes significantly reduced at least one risk factor for ED, and 29% were successful in reducing eating disorder-related behaviours among participants. For example, the *StudentBodies* online ED prevention programme conducted a cross-cultural comparison of US and German students aged 13-18 years. The prevention programme increased knowledge about eating and ED, and reduced attitudes associated with ED, such as the desire to be thin and negative body image (Beintner, Jacobi & Taylor, 2012).

On the other hand, while effective ED prevention programmes exist, few studies take into account the gender diversity of the participants and the age of the participants under 15 years. This gap is being addressed by the development of early childhood education programmes. For example, *Happy Being Me* (Richardson & Paxton, 2010), *Life Smart* (Wilksch et al., 2015), *MABIC-Project* (Sanchez Carracedo et al., 2016), *MaiStep* (Buerger et al., 2019), among others. These programmes use interactive programme content to protect against ED triggers (overeating, body dissatisfaction, etc.) from an early age. An excellent example is *The Body Image* (Camacho Ruiz et al., 2021), which significantly reduced avoidance of fatty foods, food anxiety, compensatory behaviours, perceived social pressure and the influence of advertising among Mexican boys and girls (aged 10-15 years) in the intervention group. According to Camacho Ruiz et al. (2021), this programme significantly increased participants' feelings of self-esteem, which is clearly a relevant issue in the prevention of ED.

Therefore, the authors of *The Body Image Programme* recommend that the prevention of ED should prioritise strengthening feelings of control, achieving autonomy, increasing self-esteem and self-confidence, reducing perfectionism, and increasing positive experiences of one's body.

To improve ED prevention programmes, it is important to focus on the intersection with obesity prevention. Already in 2002-2003, the Neumark-Sztainer studies argued that there were strong links between disorders, obesity and disordered eating. Although there are real differences in approaches, Neumark-Sztainer et al. (2006) suggest that strategies should be considered for the ED field to collaborate with, and learn from, professionals developing obesity prevention programmes. ED and obesity prevention overlap with healthy weight control, healthy eating habits, increased physical activity, improved media literacy, positive body image and effective coping skills. For example, although programmes such as *New Moves*, *The Planet Health* prevention tool, and the *Health at Every Size* movement have not had a particularly large impact, researchers such as Austin, Field, Wiecha, Peterson & Gortmaker (2005) call for the development of programmes that address a wide range of weight-related issues, as this is a necessary step to improving ED prevention programmes in a broader context.

For example, *SILENCE* is an evidence-based programme for older adolescents to prevent inappropriate attitudes and eating behaviours, including eating disorders and obesity. The *SILENCE* programme uses a „full-blind“ strategy, i.e. participants in the programme were not aware of the objectives of the programme, which were integrated into the lessons. In the specific case of the study by Monthuy-Blanc, Lemieux, Thériault & Rousseau (2020) the *SILENCE* programme was integrated into the secondary school curriculum by the art, French and drama teachers, with all the lessons being taught by the physical education teacher, and the graphic novel *Corkifaipo* and its virtual environment were chosen as the interdisciplinary pedagogical tool for this prevention programme. According to Monthuy-Blanc et al. (2020), this programme focused on physical self-awareness, media influence, emotion management, family and peer influence and physical activity to promote healthy eating and physical habits and emphasise physical self-perception (PSP). During the 14 weeks of *SILENCE* prevention, a positive development of the PSP components (global self-perception, perceived physical appearance, etc.) was observed.

It is important to note that the objectives of ED prevention programmes are based on protective behaviours, which can be described as skills. This is in line with the *World Health Organisation (WHO)* (1997) emphasis on the importance of life skills education in reducing health problems, including ED. This assumption is echoed in the review by Stice et al. (2007) that the life skills approach is beneficial for students and needs to be integrated into the

curriculum. Pursey et al. (2022) discuss the inclusion of eating disorder prevention content in wellbeing and mental health programmes.

The *POPS programme (Potsdam Prevention at Schools)* builds on existing research on risk and protective factors for ED, with an emphasis on sociocultural factors. This structured prevention programme focuses on the development of resources based on a life skills approach (Warschburger, Helfert & Krentz, 2011). The *POPS* programme included lessons on strengthening healthy eating and physical activity habits, reducing unhealthy eating habits, building resilience through media literacy and strategies for responding to social pressure. It also includes the introduction of problem-solving techniques and coping strategies that act as protective factors against both ED and other diseases. It is noteworthy, that this programme includes not only nine lessons with the students, but also a meeting with the students' parents. Warschburger et al. (2011) concluded that *POPS* can be implemented by teachers as a regular part of the classroom. This reflects the recommendation of Neumark-Sztainer et al. (2006) to consider sustainability, relevance, participatory approaches and the involvement of the wider school community in the implementation of the prevention programme paradigm.

#### *The role of schools and school professionals in preventing eating disorders*

A meta-analysis by Stice, Marti, Shaw & Rohde (2019) on ED prevention programmes with 7808 participants highlighted a trend towards the implementation of prevention programmes in schools by external service providers rather than by school professionals, although it is acknowledged that the implementation of programmes by teachers and peers is more effective. According to Stice et al. (2019), school professionals such as teachers, counsellors, psychologists, principals, vice-principals, and school administrators are in a unique position to be in close contact with students and to engage in discussions about body image, physical activity, and nutrition, and thus identifying problematic attitudes towards their own bodies in a timely manner.

According to Jourdan et al. (2016), school professionals' positive attitudes towards their role in contributing to the effectiveness of health promotion programmes have a significant impact on creating a supportive environment. However, a study conducted a decade ago by British researchers Knightsmith, Treasure & Schmidt (2013) showed that the majority of professionals working in schools admitted that they did not have the knowledge to recognise and support students with ED. In other words, the lack of knowledge among school professionals is considered to be one of the main barriers to effective prevention of ED in schools. Among other things, there is a lack of research that identifies the needs and attitudes of school professionals towards the prevention of ED and

contributes to the development of an effective and sustainable prevention programme.

One of the most recent studies on the needs of school professionals and their belief in their professional effectiveness in implementing eating disorder prevention approaches is by Pursey et al. (2022). The research team's study involved 51 school professionals from the New South Wales region of Australia who were over the age of 18. The school professionals identified in this study were classroom teachers, social support teachers, special education teachers, health and physical education teachers, senior teachers, school counsellors, principals, and assistant principals.

Looking at the results of this study, the majority of respondents agree that the implementation of ED prevention in schools is necessary. There are also those who believe that not all teachers need to participate in ED prevention programmes. The main reasons for this are workload and lack of knowledge. A study by Pursey et al., (2022) highlighted a gap between the perception of ED among school professionals and their lack of confidence in contributing to the direct implementation of ED prevention interventions. In other words, although respondents recognise that they, as school professionals, need to be involved in the implementation of these preventive interventions, they are not confident in their ability to implement them properly. The authors of this study argue that this attitude of the respondents shows that the role of school professionals in the prevention of ED is inconsistent.

The study by Pursey et al. (2022) reopened the problem areas in the implementation of ED prevention programmes in schools that were identified by Neumark-Sztainer, Story & Collier (1999) more than twenty years ago. One of the main barriers limiting ED prevention interventions in schools is the passive attitude of school structures that ignore higher level changes. This indicates that the implementation of ED prevention interventions in schools is still not considered a priority and it is suggested that attention should be paid not only to the perceptions of individual school professionals on ED, but also to the perceptions of educational organisations.

This situation is well illustrated by the cluster randomised controlled trial conducted by Gumz et al. (2017), which aimed to evaluate the effectiveness of a universal ED prevention programme for young females and males. The researchers invited all 144 secondary schools in Hamburg to participate in the prevention programme. Of the 144 schools – ten categorically refused to participate, 111 gave no feedback and only 23 agreed to participate. Although the school is recognised as an appropriate setting for prevention, this case study supports ideas of Pursey et al.'s (2022) ideas that a phased approach should be considered when implementing prevention interventions – prioritising schools that have expressed an interest in ED prevention.

## **Conclusions**

Addressing ED should move beyond a medical approach to a socio-cultural one, developing mental health literacy for ED in different populations and groups. This reconceptualisation would allow not only to focus on risk factors (which has long dominated research for a long time), but also to identify possible protective and preventive actions. This would allow not only social, psychological and biological factors to be taken into account, but also the development of more effective intervention strategies, which in turn could prevent serious eating disorders.

While there is an agreement on the need of formal education measures on ED in schools, there is a lack of educational policies to address ED, even when there is a marked increase in risk factors, such as body dissatisfaction, which is observed over the course of a student's schooling.

Certainly, we can see a shift from a clinical to a socio-cultural understanding of ED, and identify the levels and signs of risk for ED in relation to socio-cultural factors and characteristics, which would enable the development of ED education, prevention and intervention, and promote a multi-disciplinary approach to develop effective practical approaches.

Despite the promising evidence for some universal ED prevention programmes, there is a tendency for most of these programmes to remain at the research level, without being integrated into classroom practice. There is also a lack of ED prevention programmes that focus on gender, age, race, etc.

Based on the scientific literature, it is recommended that sustainability – be considered in the paradigm of ED prevention programmes in schools. It is suggested that participatory and life skills approaches should be used and integrated into the curriculum and the wider school community, allowing the implementation of programmes by school professionals rather than only external providers.

Research has also highlighted problems that have become a prevailing trend – a lack of knowledge among school professionals and a passive stance by school structures that ignores higher-level developments. This is seen as one of the main barriers to effective prevention of ED in schools. This indicates that the implementation of ED prevention interventions in schools is still not considered a priority. It is therefore suggested that attention should be paid not only to the perceptions of individual school professionals about eating disorders but also to the educational organisations, including the macro environments.

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# VALSTS VARAS ĪSTENOŠANA SABIEDRĪBAS VESELĪBĀ PSIHIATRIJAS JOMĀ – IETEKME UZ SABIEDRĪBAS DROŠĪBU

## *The Exercise of Public Health Powers in Mental Healthcare - the Impact on Public Safety*

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**Abstract.** *To ensure public safety, most European states have statutory powers enabling a range of compulsory interventions for persons with infectious diseases and mental disorders. The evidence of their meaningfulness in mental health patients is dubious, especially regarding their preventive effect on public safety. To reveal the mental health services' impact on violent offense commissions after discharge from involuntary inpatient care, a retrospective three-case series study was conducted. A scoping literature review was performed to construct the recommendations for practice improvement and further studies. Based on individual clinical expertise, the common issues in delivering involuntary mental healthcare in Latvia are described. To conclude, coercive psychiatric interventions shall be considered as a part of internal security and human rights protection and, therefore, shall be surveilled, in line with communicable diseases. Legal mechanisms (temporary protection against violence, coercive measures of a medical nature) are not effective against persons with severe mental illness and fail to prevent violent incidents. By the time being, during involuntary admission and treatment, the patient is subjected to various safety risks, that are inconsistent with the basic rights or best interests, and thus determines the state's obligation to promote voluntary treatment and provide the least restrictive approach.*

**Keywords:** *case study, coercion, involuntary admission, severe mental illness, violence.*

### **Ievads**

#### **Introduction**

Nebrīvprātīgās psihiatriskās palīdzības sniegšana rada klīniskas un ētiskas problēmas, pacientam tās sniedz zināmu ieguvumu, bet ir traumatiska, stigmatizējoša un nelabvēlīgi ietekmē terapeitisko procesu un līdzestību (Jones et al., 2021). Tās ilgtermiņa efektivitāti uz sabiedrības drošību ir grūti izpētīt un novērtēt (Morris & Kleinman, 2023). Nebrīvprātīgās psihiatriskās palīdzības veselības aprūpes standarti ir to izstrādes stadijā (Uden, Völlm, & Cerci, 2023); relatīvi nesen tika publicētas attiecīgas Eiropas Psihiatru Asociācijas vadlīnijas (Völlm et al., 2018) un notiek mēģinājumi tās ieviest praksē (Heitzman et al.,

2020) un izstrādāt nozarei specifiskus kvalitātes indikatorus (Tomlin et al., 2023). Eiropas Savienībā nebrīvprātīgās ārstēšanas nosacījumi un apstākļi ir vēsturiski un kulturāli determinēti un tik ļoti atšķiras, kas padara rezultātu salīdzinājumu par gandrīz neiespējamu (Weber et al., 2023). Pat praktiskai lietošanai vislabāk piemērotās vadlīnijas nesniedz izsmeļošu atbildi attiecībā uz bioloģiskās ārstēšanas izvēles taktiku (Townsend, Rodriguez, & Deacon, 2021). Tiek uzskatīts, ka tieši tiesu psihiatrisko pacientu vajadzības klīniskā praksē tiek vismazāk novērtētas un apzinātas (De Girolamo et al., 2019). Personām ar smagu psihisku saslimšanu (angl. *severe or serious mental illness*) vardarbīga uzvedība ir viens no lielākajiem aprūpes izaicinājumiem, kas nosaka vajadzību pēc hospitalizācijas un nebrīvprātīgam intervencēm, nesniedzot būtiskas veselības uzlabošanas iespējas, bet pētījumu par vardarbīgo notikumu biežumu pēc šo pacientu nebrīvprātīgās hospitalizācijas ir maz (Jardim, Ames, Hestevik, & Kirkehei, 2023). Viss iepriekšminētais nosaka pētījuma aktualitāti un tā veikšanas nepieciešamību.

Pētījuma mērķis ir aprakstīt Latvijas psihiatrijas prakses problēmas nebrīvprātīgās ārstēšanas jomā, sniedzot palīdzību personām ar smagām psihiskām saslimšanām un vardarbīgu uzvedību; piedāvāt risinājumus prakses uzlabošanai, ētisko un klīnisko problēmu risināšanai.

Pētījuma teorētiskā daļa ietvaros, balstoties praktiskā darba pieredzē, tiek aprakstītas praksē pastāvošās biežākās klīniskās un ētiskās problēmas nebrīvprātīgās psihiatriskās palīdzības jomā, atsaucoties uz nozarei saistošu tiesisko regulējumu, politiskās plānošanas dokumentiem un izmantojot piemērus no nacionālo tiesu un Eiropas Cilvēktiesību tiesas (ECT) prakses, statistikas datus un valsts iestāžu ziņojumus. Pētījuma praktiskajā daļā, izmantojot klīniskajos auditos pieņemto gadījuma analīzes metodi, tiek veikta triju gadījumu sērijas analīze: no Latvijas tiesu materiāliem (lietas par psihiatriskās palīdzības sniegšanu bez pacienta piekrišanas) tika atlasītas lietas, kur pacients veica vardarbīgu nodarījumu pusgada laikā pēc nebrīvprātīgās hospitalizācijas beigām. Tika analizēti lietās pieejamie dokumenti – izraksti no stacionārā/ambulatorā pacienta medicīniskajām kartēm, Neatliekamās medicīniskās palīdzības pavadlapas, psihiatru konsilija lēmumi par psihiatriskās palīdzības sniegšanu psihiatriskajā ārstniecības iestādē bez pacienta piekrišanas, tiesas sēžu protokoli un pilnie tiesas nolēmumi. Retrospektīvi tika novērtēta saņemtās palīdzības atbilstība mūsdienās pieņemtajiem ārstēšanas standartiem, ētikas un tiesību principiem. Pētījumā tika iekļautas trīs slēgtās tiesas sēdēs izskatāmās lietas, lietu numuru un nolēmumu datumi netiek publicēti, bet ir pētnieku rīcībā. Pamatojoties uz literatūras datiem (publikācijām medicīnas ētikā, psihiatrijā, epidemioloģijā un medicīnas tiesībās) tiek piedāvāti konstatēto problēmu risinājumi, izstrādāti priekšlikumi veselības aprūpes prakses uzlabošanai.

## Pētījuma rezultāti *Results*

Lielākajai daļai Eiropas valstu tiesiskais regulējums paredz piespiedu mērus (nebrīvprātīgās medicīniskās intervences) psihisko (Wasserman et al., 2020) un infekciju slimību (Coker & Martin, 2005) gadījumos. Pētnieki bieži vien norāda uz šo medicīnas nozaru tiesiskā regulējuma praktiskā pielietojuma problēmu līdzību, cilvēktiesību aizskāruma riskiem un vismazāk ierobežojošu intervencu izmantošanas nepieciešamību, maksimāli attālinot nebrīvprātīgo stacionēšanu un piespiedu izolāciju (Gostin, 2005). Eiropas valstu tiesiskā regulējumā tiek pasvītrots nebrīvprātīgo intervencu izņēmuma raksturs psihiatrijā (Saya et al., 2019) un arī Latvijā kopš 2007.gada lēmumu par psihiatriskās palīdzības sniegšanu stacionārā pieņem tiesa, nevis vairs ārstu konsilijs. Realizējot valsts pārvaldes uzdevumu biodrošības jomā - infekciju slimību ierobežošanu – tiek veikta secīgu darbību kopa, piespiešanas pakāpei graduāli pieaugot atbilstoši infekcijas izplatības riskam: gadījuma identifikācija, reģistrācija, kontaktu izsekošana, izolācija; infekciju slimības dabiskā norises cikla pārtraukšana – veselīgo indivīdu obligāta vakcinācija, ierobežošanas mēru ieviešana sabiedrībā. Šajā gadījumā īstenojot piespiedu varu atbilstoši novēršamā kaitējuma teorijai (angl. *avoidable harm*) un valstiskās rīcības doktrīnai (angl. *police power*; saskaņā ar to valstij ir tiesības un pienākums aizsargāt sabiedrības drošību un kārtību), valsts nevis rīkojas indivīda interesēs, bet gan novērš lielu kaitējuma iespējamību sabiedrībai (Gostin, 2005). Dažreiz inficētās personas brīvības un citas tiesības tiek ierobežotas pārmērīgi (Carter, 2020).

COVID-19 pandēmijas ietekmē piespiedu epidemioloģiskās drošības mēri piedzīvoja savu renesanci, aktualizējot galveno jautājumu – cik tālu valsts var iejaukties privāto tiesību sfērā, rūpējoties par sabiedrības veselību un drošību. Tomēr par pretepidēmijas mēru efektivitāti vismaz var pārliecināties pēc saslimšanas gadījumu statistikas un citiem rādītājiem (Leung et al., 2022).

Nebrīvprātīgām intervencēm psihiatrijā ir dzīvību glābjoša nozīme, tās iekļauj piespiedu nogādāšanu un ievietošanu psihiatriskā stacionārā, ierobežošanas mērus (izolāciju, fizisku, mehānisku un farmakoloģisku imobilizāciju), piespiedu bioloģisku ārstēšanu. Papildus pie jau pieminētās *police power* teorijas, psihisko traucējumu gadījumā spēkā ir arī t.s. *parens patriae* doktrīna – lemjot par nebrīvprātīgo ārstēšanu parasti tiek pasvītrots, ka tā ir pacienta veselības labā (viņa labākajās interesēs), lai gan viņš to šobrīd neapzinās. Tas saskan ar ECT viedokli, ka piespiedu stacionēšanai ir divas funkcijas - sociāla (drošības) un terapeitiskā (ECHR, 1983). Arī Latvijas tiesas lietās par psihiatriskās palīdzības sniegšanu bez pacienta piekrišanas bieži vien pirmkārt norāda, ka nebrīvprātīgā stacionēšana ir ar nolūku atjaunot vai uzlabot pacienta veselības stāvokli (Zemgales rajona tiesa, 2019a.), neskatoties uz datiem, ka vairākkārtīgi mēģinājumi to panākt iepriekš nav vainagojušies ar panākumiem.

Pēc mūsu domām, sociālās drošības mērķis ir jāsaprot paplašināti – ne vien kā nepieciešamību novērst tiešus, tūlītējus draudus, personu izolējot, bet arī nodrošinot to prevenciju vismaz kādu laiku pēc izrakstīšanas. Tradicionāli šādu pieeju atbalsta arī zinātnieki, pētot vardarbīgā nodarījuma atkārtēšanos dažus mēnešus līdz gadu pēc izrakstīšanas no psihiatriskā stacionāra (Steadman et al, 1998). Pieminēsim, ka pēc analogijas ar hroniskām infekciju slimībām, hronisko psihisko saslimšanu paasinājumiem ir tipiska līdzīga (klišejas tipa) simptomātika – resp., ja iepriekšējo epizodi pavadīja psihomotors uzbudinājums ar vardarbīgu rīcību, ar lielu varbūtību tā atkārtosies pie nākamā paasinājuma. Tas būtu jāņem vērā, plānojot ārstēšanu vai sastādot iepriekš pausās gribas līgumu.

Jāsaka, ka vēl nesena pagātnē tieši no psihiatriem tika sagaidīta valstiska rīcība saskaņā ar *parens patriae* principu, ar nolūku garantēt sabiedrības un pašu slimnieku drošību, neprasot informēto piekrišanu un nepieciešamības gadījumā pielietojot piespiedu intervences (Becker & Forman, 2020). Toties mūsdienās neatliekamā psihiatriskā palīdzība ir vienīgais izņēmums no vispārējā medicīnā pieņemtās t.s. prezumējamās piekrišanas doktrīnas: ārstēšana ir uzsākama tikai pēc informētās piekrišanas saņemšanas vai uz tiesas lēmuma pamata; piespiešana ir jāizskauj (World Health Organisation (WHO), 2023), jāveicina brīvprātīgā ārstēšanas saņemšana (Gooding, 2021).

Pēc Slimību profilakses un kontroles centra datiem Latvijā 2022.gadā bija 196 nebrīvprātīgās ārstēšanu gadījumi (ieskaitot piespiedu psihiatrisko ārstēšanu stacionārā ar apsardzi) un to saņēma 180 unikāli pacienti. Un par šo piespiedu intervencu kvalitāti un efektivitāti (pēc analogijas ar infekciju slimībām – vai ir pārtraukts slimības “dabiskais norises cikls”) spriest nevar: regulāri Latvijā tiek mērīts tikai viens kritērijs psihiskās veselības jomā - pacientu ar šizofrēniju, šizotipiskiem traucējumiem vai murgiem neatliekama stacionēšana 30 dienu laikā tajā pašā stacionārajā ārstniecības iestādē. (Ministru kabinets, 2022).

Savukārt, vairākās ārzemju valstīs (Lielbritānijā, Norvēģijā, Somijā, Austrālijā, Vācijā), atbilstoši valsts pārvaldes caurspīdīguma principam, ir pieejami monitorēšanas sistēmu dati, kas apkopo statistiku par piespiedu intervencēm psihiatriskos stacionāros. Latvijā neviens veselības aprūpes indikators nesatur šādu informāciju, kas neļauj to monitorēt valsts līmenī, kā arī pacientiem un viņu radniekiem neļauj iepazīties ar konkrētas ārstniecības iestādes praksi un statistiku. Jāsaka, ka aprūpes standartu un kvalitātes (struktūras, procesa, iznākuma un izmaksu) indikatoru izstrāde ir sarežģīts un multidimensionāls process, kas ietver sevī sākumā aprūpes kvalitātes standartu izstrādāšanu, tiem atbilstošu pasākumu un indikatoru ieviešanu; pirms tam jānotiek diskusijām ar visu iesaistīto pušu (pacientu pārstāvju, veselības aprūpes pakalpojumu sniedzēju un maksātāju) vienošanās (National Institute for health and care excellence, 2021). Neatņemama veselības aprūpes kvalitātes uzlabošanas sastāvdaļa ir klīniskie auditi (Baldwin et al., 2021), ko psihiatrijā var izmantot arī smagas vardarbības gadījumiem, *post factum* konstatēt pieļautās kļūmes un

likvidēt nepilnības (starpinstitūciju sadarbības trūkumu, nepietiekamu personāla apmācību vai pārslodzi (Trebilcock & Weston, 2019; Eastman, 1996) un turpmāk praksē ieviest drošības faktorus.

Tiek uzskatīts, ka nebrīvprātīgās hospitalizācijas ilgumam jābūt minimālam un pacientam pēc iespējas ātrāk jāpiedāvā ārstēšanās mazāk ierobežojošajos apstākļos, saņemot personalizētu aprūpi, kas viņu pasargātu no rehospitalizācijas (Pakunwanich, Bjørndal, & Seedhouse, 2024). Diemžēl, neatkarīgi no vardarbīgā nodarījuma smaguma, sociālās situācijas, lemtspējas trūkumiem, spējas rūpēties par sevi, šobrīd Latvijā ambulatorā psihiskās veselības aprūpes sistēma nepiedāvā nevienu specializētu programmu pacientiem ar smagu psihisku saslimšanu vai pēc nebrīvprātīgās hospitalizācijas, nenodrošina ārstēšanas nepārtrauktību, tādējādi laupot veiktās nebrīvprātīgās intervences jēgu un izņēmuma raksturu.

Citās medicīnas nozarēs parasti intensīva ārstēšana tomēr droši paaugstina izdzīvošanas vai labvēlīga iznākuma varbūtību, pat izārstē (piem., antibiotikas pie bīstamās infekciju slimības), kas pārsvarā atsvēr ārstēšanas un piespiešanas radīto diskomfortu un ļauj to uzskatīt par pacienta interesēm atbilstošu. Bet psihiatrijā radikāla izārstēšanās parasti nav iespējama. Plānojot ārstēšanu, ārsts ar pacientu panāk vienprātību, izvēloties starp konkurējošiem rezultātiem: piemēram, antipsihotiķi bieži ne vien pasliktina garastāvokli, rada grūti aprakstāmu iekšējā diskomforta sajūtu (Awad, 2019), bet arī var izraisīt neatgriezeniskās neiroloģiskās blaknes pat pēc īslaicīgas lietošanas (Chandra, Sheth, Mehta, & Dave, 2017) palielina mirstību (Wang et al., 2022) un rada atkarības risku (Roy, 2022). Sakarā ar dopamīna receptoru jutīguma pieaugumu pēc antipsihotika atcelšanas (kas parasti notiek drīz pēc izrakstīšanas no stacionāra) pacients ir vēl vairāk predisponēts paasinājuma riskam (Yin, Barr, Ramos-Miguel, Procyshyn, 2017) - resp., paasinājumu un agresiju var izprovocēt pat nelielas dopamīna koncentrācijas paaugstināšanās sinaptiskā spraugā (tas var notikt, piem., smēķējot tabaku vairāk, nekā slimnīcā). Citiem psihiatrijā nozīmīgiem medikamentiem arī piemīt nozīmīgas blaknes ar tālejošām sekām - antidepresanti spēj izjaukt cirkadiālo ritmu sistēmu, paaugstinot nopietno psihisko traucējumu varbūtību nākotnē (Hickie & Crouse, 2024), un palielina vardarbīgo nodarījumu risku (Lagerberg et al., 2020). Antikonvulsanti spēj negatīvi ietekmēt nākamo paaudžu neirālo attīstību (Wise, 2024) un palielina demences risku (Zhang, Jiang, & Liu, 2023). Benzodiazepīni var neatgriezeniski bojāt kognitīvas funkcijas (Barker, Greenwood, Jackson, & Crowe, 2004) un radīt citu nervu sistēmas bojājumu (Ritvo et al., 2023). Jāsaka, ka pat regulāra uzturošās terapijas lietošana nespēj garantēti pasargāt no paasinājuma un hospitalizācijas (Moncrieff et al., 2023). No otras puses, sen ir zināma psihisko traucējumu autohtona epizodiska (pašlimitējošā) norise – respektīvi, psihisko traucējumu uzliesmojums ar laiku pāries, simptomi reducēsies neatkarīgi no bioloģiskās ārstēšanas, ko apstiprina arī pētījumos (Calton, Ferriter, Huband, & Spandler, 2008). Pagaidām uz pierādījumiem balstīta un reizē personalizēta psihotropo zāļu izrakstīšana,

slimnieku pasargājot no viņam individuāli nozīmīgām blaknēm, ir neizpildāms uzdevums (Pillinger et al., 2023). Papildus jāatceras, ka slēgto psihiatrijas nodaļu apstākļi pastiprina endogēno slimību negatīvo simptomātiku un pasliktina sociālo funkcionēšanu. Nav retums hospitalizēto pacientu traumas paškaitējumu un kautiņu rezultātā – piemēram, 2019.gadā stacionārā sešpadsmito reizi stacionēts jauniešs Z “brutāli sita” citus pacientus, “sagrāba vienu pacientu un ar dūri smagi sita pa vēderu”; personāls ar grūtībām spēja viņus izšķirt (Zemgales rajona tiesa, 2019b). Identiska situācija aprakstīta ECT lietā *Šteina pret Latviju*: 2013.gadā pieteicējas tēvs nomira pēc Aknīstes psihoneiroloģiskajā slimnīcā iegūtiem ievainojumiem; uzbrucējs (cits pacients) bija atzīts par nepieskaitāmu (ECHR, 2023). Piespiešana pacientiem rada protestu un pakļauj riskam arī personālu: piem., kāds 20.g.v. jauniešs pirmo reizi nonākot psihiatriskā slimnīcā gribēja no nodaļas mukt – uzbrucis sanitāram, iesitis viņam pa galvu, spēris; pēc kautiņa viņam konstatēts galvaskausa kaula lūzums (Rīgas pilsētas Vidzemes priekšpilsētas tiesas lēmums, 2021). Ierobežošanas līdzekļu pielietošanas laikā pacienti ir pakļauti dažādu traumu un nāves riskam (Berzlanovich, Schöpfer & Keil, 2012; Kersting, Hirsch & Steinert, 2019). Visdrīzāk, tāds bija arī traģiskā negadījuma iemesls ECT lietā *Zierd v Germany*: pacients ar smagiem psihiskiem traucējumiem veica vairākus sabiedriski kaitīgus nodarījumus, saskaņā ar tiesas lēmumu bija nebrīvprātīgi stacionēts “labošanas un drošības” mēru ietvaros; psihiatriskā slimnīcā viņš saņēma vairākas piespiedu medikamentu injekcijas un gāja bojā - atrasts palātā miris (ECHR, 2014).

Ar nebrīvprātīgām psihiatriskām intervencēm saistīti arī citi pacientu drošības incidenti, kuru konsekventa reģistrācija un ziņošana ir Latvijas veselības aprūpes sistēmas nākotnes uzdevums. Piemēram, Latvijā periodā no 2000. līdz 2020.gadam nav ziņojusi nevienu suīcīda gadījumu psihiatriskā stacionārā (OECD, 2020), kas viennozīmīgi neatspoguļo realitāti: Veselības Inspekcija, veicot pacientu nāves iemeslu auditu, 2019.gadā vien konstatēja vismaz divus gadījumus – viens pacients ieguva smagu galvas traumu, otrā gadījumā slimniece izleca pa logu un nosala līdz nāvei; nevienā no minētiem gadījumiem netika pieņemti mēri, lai novērstu līdzīgo situāciju atkārtošanās nākotnē (Veselības Inspekcija, 2020).

Līdz ar to vienīgais līdzeklis, kas nākotnē spēj ārstus pasargāt no prasībām kompensēt veselībai nodarīto kaitējumu, ir balstīt ārstēšanu uz brīvprātīgās informētās piekrišanas (Kaye & Reed, 1999), kas, protams, nevar tikt ievērots nebrīvprātīgās ārstēšanas gadījumā.

Kā tika noskaidrots iepriekš, nebrīvprātīgai stacionēšanai ir jābūt ne vien ar sociālo, bet arī ar terapeitisko mērķi. Saskaņā ar Eiropas Padomes Rekomendāciju Nr.REC(2004)10 “Attiecībā uz personu ar garīga rakstura traucējumiem cilvēktiesību un cieņas aizsardzību”, nebrīvprātīgās stacionēšanas gadījumā ārstēšanai ir jābūt vērstai uz konkrētiem klīniskiem simptomiem un pazīmēm, būt personas veselības stāvoklim atbilstošai (Legemaate, 2004). Pasvītrosim, ka

vardarbīga uzvedība *per se* nav klīnisks simptoms un tai nav specifisko medikamentu. Atšķirībā no daudzām citām valstīm (Salize & Dreßing, 2005), Latvijā tiesa neapstiprina nebrīvpātīgas ārstēšanas plāna pasākumus, tie paliek pilnībā ārstu ziņā. Gadījumos, kad persona ir stacionēta vardarbīgās uzvedības dēļ, bieži vien mediķi sastopas ar pacienta lemtspējas (angl. *decision-making capacity*) un kritikas trūkumu (angl. *insight*), nelīdzestību, atteikšanos medikamentus lietot (kas ir visnotaļ saprotams, ņemot vērā medikamentu blaknes). Psihiatrijā pacienta labāko interešu koncepcija atrodas izstrādes stadijā (Coggon, 2016), līdz ar to ārstēšanas mērķa formulējums un medikamentu izvēle pacienta labāko interešu kontekstā kļūst par klīnisku un ētisku izaicinājumu. Piemēram, daži pētnieki norāda, ka ārstēšanas pamatuzdevums ir vispirms izbeigt vardarbību, tāpēc medikamentiem ir drīzāk prevencijas loma (Kropp, Hart & Lyon, 2002). Latvijā psihiatriskos stacionāros nodrošinājums ar personālu tālu atpaliek no ārzemēs akūtās nodaļās pieņemtā principa “personāla vairāk, nekā pacientu” (Wilson, Rouse, Rae, & Kar Ray, 2017), nav iespējams īstenot tiešo uzraudzību, mazināt vajadzību pēc ierobežošanas līdzekļu pielietošanas, tāpēc bieži vien medikamentu izvēli nosaka arī pārējo pacientu drošības apsvērumi.

Latvijā personu brīvību aizsargā gan Latvijas Republikas Satversmes 94.pants, gan Eiropas Cilvēka tiesību un pamatbrīvību aizsardzības konvencijas (Konvencija) 5.pants. Personu ar psihiskiem un uzvedības traucējumiem brīvības ierobežošana notiek kriminālprocesa ietvaros pirmstiesas etapā (saskaņā ar Kriminālprocesa likuma 599.pantu) un pēc tiesas lēmuma (realizējot medicīniska rakstura piespiedu līdzekli, MRPL) un saskaņā ar Ārstniecības likuma (ĀL) 68.pantu, sniedzot psihiatrisko palīdzību stacionārā bez pacienta piekrišanas, attiecībā uz ko Latvijas judikatūrā nostiprinājās atziņa: “...psihiatriskās palīdzības sniegšana, nesaņemot personas piekrišanu, iespējama tikai izņēmuma gadījumos, kad konstatēti akūti psihiskas darbības traucējumi, kas apdraud pacienta dzīvību un kuriem raksturīga agresīva rīcība vai pašnāvības mēģinājums” (Augstākā tiesa, 2013). Atšķirībā no ārstniecības informētās piekrišanas gadījumā, valsts šajā situācijā ne vien vienkārši maksā par veselības aprūpi pacienta vietā, bet arī ar ārstniecības personu rokām īsteno savu piespiedu varu pār personu, valda pār viņu, kamēr persona atrodas konfrontācijā ar valsti. Ir zināmi pieci Eiropas Cilvēktiesību tiesas (ECT) spriedumi pret Latviju lietās par nebrīvprātīgu hospitalizāciju; nevienai no tām nebija būtiskas ietekmes uz tiesisko regulējumu (Niveau, Jantzi, & Godet, 2021). Diemžēl, Latvija ir viena no tām Eiropas Padomes valstīm, kas nav ziņojusi par jebkādām aktivitātēm brīvprātīgo mēru veicināšanai psihiatrijā (Gooding, 2021) un arī šobrīd psihiskās veselības aprūpes organizēšanas plāns neparedz nevienu mērķtiecīgu pasākumu piespiešanas izkaušanai (Ministru kabinets, 2022).

Papildus atzīmēsim, ka atšķirībā no dažām citām valstīm Latvijā nav iespējams pacientam ievadīt medikamentus pret viņa gribu (tikai farmakoloģiski imobilizēt tiešo draudu gadījumā) vai ievietot atsevišķā palātā, kas var radīt

ilgstošus drošības riskus citiem pacientiem, pacientam pašam un medicīnas personālam. Savukārt, no valstīm, kur tiesa atsevišķi apstiprina arī piespiedu medicīnisko intervenču plānu, ir ziņojumi par pozitīviem iznākumiem klozapīnu ievadot ar zondi (pirms tam, protams, īslaicīgi pacientu imobilizējot) vai muskulī – tas palīdzēja pat šķietami bezcerīgu, rezistentu psihisko traucējumu gadījumos, ļāva atcelt ilgstošu pacientu izolēšanu (Till & Silva, 2019; Till, Selwood & Silva, 2019); Latvijā attiecīgās klozapīna formas nav pieejamas.

Atsevišķi ir jāpiemin, ka Latvijā pusaudžiem ar nelabvēlīgi noritošo psihisko saslimšanu, neskatoties uz negatīvo prognozi, ārstēšanas efekta trūkumu, parasti netiek nozīmēta ārstēšana ārpus reģistrētām indikācijām, lai gan šāda praksē pastāv citur pasaulē (Krause et al., 2018; Baeza, Fortea, Ilzarbe, & Sugranyes, 2023), tādā veidā pacienti droši zaudē pat minimālas cerības uz pietiekamu lemtspējas līmeni, sasniedzot pilngadību (skat. gadījumu Nr.1).

No otras puses, atšķirībā no citām medicīnas nozarēm, veltīgās ārstēšanas kritēriji (Pienaar, 2016) un paliatīvās aprūpes koncepts (Masel, Antunes, & Schulz-Quach, 2023) psihiatrijā vēl tikai tiek izstrādāti, bet mūsumājas psihiatru terapeitisks entuziasms dažreiz ir apskaužams: piemēram, Latvijā 2019.gadā ir atgriezies elektrokonvulsīvā terapija (EKT) un jau 2021.gadā Strenču psihoneiroloģiskās slimnīcas ārsts ziņoja par vairākiem desmitiem EKT seansiem pacientei ar hronisku katatonisku stuporozo šizofrēniju (noturīgu smadzeņu zemgarozas bojājuma simptomātiku), kura dzīvoja pensionātā un tika pārvesta uz slimnīcu un atpakaļ – katru reizi EKT viņai sniedza īslaicīgu efektu (paciente kādu laiku vairāk pakustējās, labāk ēda). Katru reizi pie pārvešanas no pensionāta uz slimnīcu slimniece esot devusi informēto piekrišanu stacionēšanai un EKT, apzinoties visus riskus un alternatīvas (Līcis, 2021). Pēc raksta autoru novērojumiem arī stacionārai ārstēšanai netiek saskatītas savas robežas un negatīvas puses – piem., 195X.gadā dzimusī paciente ar hronisku šizofrēniju, noturīgu atteikšanos no ēdiena un verbālās komunikācijas, ar stabilu negatīvu simptomātiku un nelīdzestību ambulatorai aprūpei, tiek septiņpadsmito reizi stacionēta psihiatriskā slimnīcā. Viņa kategoriski atsakās sniegt rakstisku piekrišanu stacionēšanai, bet labprāt pieņem aprūpi, palātā gulšņā un lūdzas, ne ar vienu nesarunājas; viņai tiek izsniegtas zāles un tiek sekots higiēnai. Psihiatru konsilijš lēma par nebrīvprātīgās ārstēšanas nepieciešamību, kārtējo reizi lūdzot tiesu apstiprināt savu lēmumu uz ārstēšanas laiku uz diviem mēnešiem, bet pēc tam, neredzot veselības stāvokļa uzlabošanos un ignorējot hronisko šizofrēnijas slimnieku rehabilitācijas principus – vēl uz sešiem mēnešiem (Rīgas pilsētas Vidzemes priekšpilsētas tiesas lēmums, 2021a).

Jāsaka, ka tāda pacientu ar smagiem psihiskiem un uzvedības traucējumiem stacionēšana un ārstēšana, pamatojoties uz viņu rakstiskās piekrišanas, neapšaubot un nevērtējot viņu lemtspēju un sniegtās piekrišanas kvalitāti, ir viens no biežākiem cilvēktiesību pārkāpumiem mūsdienu psihiatrijā (to demonstrē arī Gadījums Nr 1.), uz ko savulaik norādīja Eiropas Padomes Spīdzināšanas un



necilvēcīgas vai pazemojošas izturēšanās vai soda novēršanas komiteja savas vizītes laikā Latvijā (European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment, 2017) un tas ir jāuzskata par nebrīvprātīgu ārstēšanu (Davidson, 2016).

### **Gadījumu sērijas analīze** *Case series analysis*

#### **Gadījums Nr. 1.**

X ir kopš bērnības ar šizofrēniju slims jauniešs, kuram ir tipiska agresīva uzvedība pret apkārtējiem (klases biedriem, piederīgiem, pilsētas iedzīvotājiem; savulaik uzrakstīja draudu vēstuli savas izglītības iestādes skolotājam). Vairākkārtīgā ārstēšana stacionārā (vismaz 14 reizes) kaut cik būtiskus un noturīgus rezultātus viņam nesniedz (parasti tika stacionēts pēc vardarbīgas rīcības – uzbrucis piederīgiem ar nazi, koka zobenu; skrējis pa ielu ar nazi rokās; stacionārā nekad nav saņēmis klozapīnu vai depo preparātus). Viņam ir tipisks pilnīgs slimības apziņas jeb kritikas trūkums (lai gan iestājoties slimnīcā visbiežāk informētās piekrišanas veidlapā bija parakstījis, tāda stacionēšana tomēr jāuzskata par nebrīvprātīgu, lai gan attiecīgs tiesu process arī netika uzsākts) un aplama savas situācijas izpratne – tā, savulaik X atteicās piedalīties tiesas sēdē, kur tiek lemts par psihiatriskās palīdzības sniegšanu bez viņa piekrišanas - neticēja, ka tā vispār notiks, par cik ārsti sazvērējās, speciāli organizēja viņu nogādāšanu un turēšanu slimnīcā. Vajāšanas un kaitēšanas murgu ideju dēļ ilgstoši jūtas apdraudēts gan no pilsētas iedzīvotāju, gan no policijas darbinieku puses, pārliecināts, ka piederīgie pret viņu slikti izturas, nebaro, apspiež, zāles tiek nepamatoti nozīmētas un tikai “bojā aknas”.

Četru gadu garumā X veica neatlaidīgu nevēlamu saziņu ar nepilngadīgu meiteni, kuru līdz tam nav pazinis - zvanīja, rakstīja, ieradās viņas pilsētā, mēģināja satikties; apgalvoja, ka ir iemīlējis un vēlas dzīvot viņas vecāku ģimenē. Uz meitenes piederīgo lūgumiem “izbeigt vajāšanu” paskaidroja, ka “ja būtu vajājis, būtu nogalinājis”. Tika ierosināta krimināllieta pēc Krimināllikuma 132.<sup>1</sup> panta (“Vajāšana”), pirmās instances tiesa 2019.gadā atzina X par nepieskaitāmu un nozīmēja MRPL. Apelācijas instances tiesa nekonstatēja, ka X būtu izteicis draudus cietušajai vai viņas radniekiem, ka X vēstulēm būtu iebaidīšanas raksturs, kas cietušajai radītu pamatu baidīties par savu vai tuvinieku drošību. Lietā nebija ziņu, ka X būtu vardarbīgs pret cietušo vai viņas tuviniekiem vai agrāk bija sodīts par vardarbīgiem noziedzīgiem nodarījumiem. Cietušo bažas arī neliecina par reālas vardarbības piedraudējumu. Lietā nebija pierādījumu, kādi tieši emocionāli pārdzīvojumi ir radušies cietušajai X rīcības rezultātā. Apelācijas tiesa pirmās instances tiesas lēmumu atcēla un kriminālprocesu izbeidza, jo nekonstatēja noziedzīgā nodarījuma sastāva objektīvās puses pazīmes (Latgales apgabaltiesa, 2019).

X māte 2020.gadā cēla pieteikumu par pagaidu aizsardzību no vardarbības pirms prasības celšanas (iespējamā prasītāja pieteikumā par pagaidu aizsardzību pret vardarbību bija norādījusi, ka ir izteikti draudi viņas veselībai un dzīvībai, no X pret viņu bija neadekvāti agresīvs, bija dusmu lēkmes bez iemesla, X ir ļaunatminīgs, visu laiku kontrolē ko māte dara, kur iet, kam zvana, ko runā, pieprasa pierādījumus, pastāvīgi saukājas necenzētiem vārdiem, bļauj, atvaino apkārtējus vielu lietošanā, pazemo, nerēķinās ar citu ģimenes locekļu vajadzībām). Ārstējošā psihiatre tiesai X raksturoja kā agresīvi noskaņotu, ar pretenzijām pret visu un visiem, īpaši pret vecākiem. Viņš patvaļīgi pārtrauc medikamentu lietošanu, kas pasliktina viņa veselības stāvokli. Pacientam tika ierobežota rīcībspēja. Viņš bieži raksta sūdzības valsts policijai un policija tiek bieži saukta uz ģimenes strīdiem.

Ar Zemgales rajona tiesas nolēmumu 2020.gada nogalē X bija noteikti ierobežojumi - tostarp pienākums atstāt vecāku mājokli un aizliegums uzturēties tam tuvāk par 50 metriem, aizliegums satīties vai sazināties ar māti. Tiesas nolēmumu X pārsūdzēja, tiesai paskaidroja, ka ar vecākiem viņam ir konflikti kopš bērnības, ka nesaprot, kāpēc māte pēkšņi jutusies apdraudēta, ka pats esot iesniedzis daudzas sūdzības policijā par saviem vecākiem. Visos gadījumos māte viņam esot iesitusi, bet viņš aizstāvējies.

Nolēmums atcelts 2021.gada sākumā, tiesai konstatējot, ka X ir hroniski psihiski slims un, iespējams, savu rīcību vadīt nespēj un rīkojies neapzināti, kas ir pietiekams pamats, lai atceltu pagaidu aizsardzības pret vardarbību līdzekļus; tiesa norādīja, ka ierobežojumi var pārmērīgi skart X tiesības un intereses, kā arī ieteica mātei ģimenes konfliktus risināt citā ceļā (nevis vērstoties tiesā).

Kārtējo reizi pēc vardarbības epizodes 2022.gada pavasarī X bija stacionēts neatliekamā kārtā. Tiesa secināja, ka X "brīvības ierobežošana, ievietojot viņu psihiatriskā ārstniecības iestādē bez viņa piekrišanas uz diviem mēnešiem, ir tiesiska un samērīga, ar mērķi nodrošināt X garīgās veselības atjaunošanu un uzlabošanu" (Zemgales rajona tiesa, 2022).

## **Gadījums Nr. 2.**

Vīrietis, 198X.dz.g., ilgstoši slimo ar šizofrēniju, kriminālprocesa ietvaros ir nozīmēts MRPL (ārstēšana ambulatori pie psihiatra; iepriekš ir bijusi ārstēšana stacionārā, arī nodaļā ar apsardzi, kas netieši norāda uz nodarījuma smagumu). Iepriekšējo reizi stacionārā saņēmis psihiatrisko palīdzību bez piekrišanas 2021.gada rudenī un jau 2022.gada sākumā stacionēts atkārtoti – kopš decembra pacientam ir izmaiņas uzvedībā, lietojis alkoholu, halucinējis, vedis mājās nepilngadīgus, draudējis nogalināt tēvu, bija pret viņu fiziski vardarbīgs (Kurzemes rajona tiesa, 2022).

### **Gadījums Nr. 3.**

Vīrietis, 199X.dz.g., ilgstoši slimo ar šizofrēniju, slimības paasinājumu laikā ir tipiska agresija, kopš 2016.gada stacionārā ir ārstējies 10 reizes. Pēc izrakstīšanas uzturošo terapiju parasti pārtrauc. 2020./2021.gadu mijā ir saņēmis psihiatrisko palīdzību bez piekrišanas un jau 2021.gada maijā tika stacionēts ar kārtējā paasinājuma simptomātiku: ielaistā sanitāri-higiēniskā stāvoklī, atteicās no ēdiena, draudējies nogalināt piederīgus, nogalināja mājdzīvnieku; stacionārā uzbrucis personālam, nodarot miesas bojājumus, par ko ir ziņots policijai (Zemgales rajona tiesa, 2022c).

### **Diskusija** **Discussion**

Nebrīvprātīgās psihiatriskās ārstēšanas gadījumā tiek ierobežotas ne vien personas tiesības uz autonomiju un pašnoteikšanos, privātās dzīves neaizskaramību, bet arī aizskartas tiesības uz veselību un pat dzīvību, kas nosaka nepieciešamību pēc pastiprinātas valsts uzmanības un uzraudzības kā pār iekšējās drošības sastāvdaļu un cilvēktiesību aizsardzības sfēru (līdzīgi, kā tas šobrīd ir epidemioloģiskās drošības jomā). Raksta autori piekrīt viedokļiem, ka patiens nebrīvprātīgās ārstēšanas mērķis ir pacienta spēju uz autonomiju atgūšana (Pakunwanich, Bjørndal & Seedhouse, 2024), lemtspējas uzlabošana vai atjaunošana; pacientu labāko interešu lokā iekļaujamas arī tiesības tikt pasargātam no vardarbīgā nodarījuma izdarīšanas (Fennell, 2008), tiesības būt pasargātam no suicīda (Curtice, 2023) un vardarbīgā nodarījuma gadījumā pats pacients jāuzskata par tajā cietušo (Miller & Hanson, 2020). Vardarbīga rīcība psihisko un uzvedības traucējumu rezultātā būtu jāuzskata par novēršamo kaitējumu veselības aprūpē, jāanalizē tās iemesli un jāizstrādā mēri to prevencijai nākotnē.

Psihiatriskos stacionāros ieviešot iekšējo pacientu drošības ziņošanas–mācīšanās sistēmu, kā arī pārejot uz Starptautiskās statistiskās slimību un veselības problēmu klasifikācijas vienpadsmito (11.) redakciju, kas paredz detalizētu pacientu drošības gadījumu reģistrāciju (Forster, Chute, Pincus, & Ghali, 2021) var paredzēt prasību kompensēt veselībai nodarīto kaitējumu pieaugumu. Pēc raksta autoru domām, nebrīvprātīgās ārstēšanas gadījumā, ja ārstēšanas plānu apstiprināja tiesa, kompensācija būtu jāizmaksā no valsts līdzekļiem (nevis no Ārstniecības riska fonda) – līdzīgi kā tas ir gadījumos par smagu vai vidēji smagu kaitējumu pacienta veselībai vai dzīvībai, kas radies apstiprināto vakcīnas pret Covid-19 infekciju blakusparādību dēļ.

Gadījums Nr. 1 demonstrē, ka ilgstoša atkārtotā piespiešana (ārstēties stacionārā) nespēj nedz uzlabot pacienta veselības stāvokli, nedz pasargāt no vardarbīgo nodarījumu veikšanas. Tiesiskie mehānismi (krimināltiesiski un civiltiesiski) un policijas iesaistīšana nespēj pasargāt sabiedrību no X agresīvas un traucējošās uzvedības. Neskatoties uz sliktu prognozi, zemo līdzestību un

progresējošu sociālu dezadaptāciju X ilgstoši nav saņēmis ārstēšanu ar klozapīnu vai ilgstošas darbības depo preparātiem. Pacients ar smagu psihisku salimšanu, noturīgiem un būtiskiem lemtspējas trūkumiem nesaņēma savām vajadzībām atbilstošu atbalstu un piemērotus sociālus pakalpojumus. Kārtējai nebrīvprātīgai ārstēšanai, ko tiesa apstiprināja 2022.gadā, ir paredzama tikai īslaicīgās izolācijas nozīme vecāku drošības nolūkā. Apelācijas tiesa, skatot lietu par pacienta mātes pagaidu aizsardzību pret X vardarbību, ignorēja ziņas par X ilgstošu fizisku agresiju pret piederīgiem vairāku gadu garumā, bet pamatoti norādīja uz šo mēru potenciāli katastrofālu efektu uz X kā uz personu ar invaliditāti tiesībām.

Gadījumi Nr. 2. un Nr. 3. demonstrē, ka pacienti ar smagu psihisku saslimšanu, kritikas trūkumu un noslieci uz vardarbīgu rīcību nesaņem savām vajadzībām atbilstošu atbalstu, lai gan dzīvo ģimenēs un atrodas speciālistu redzeslokā – visdrīzāk, tas notika tādēļ, jo esošā ambulatorā veselības aprūpes sistēma nav viņu vajadzībām piemērota. Iepriekš saņemtā nebrīvprātīgā ārstēšana stacionārā nespēja novērst vardarbīgu rīcību tuvā nākotnē.

Lai gan pētījuma praktiskās daļas materiālus veido tika izmantoti tikai trīs gadījumu materiāli, tomēr pēc raksta autoru klīniskajā pieredzē gūtajiem novērojumiem tie uzskatāmi demonstrē nozarei tipisku problemātiku un norāda uz nepieciešamību zinātniekiem un speciālistiem pievērsties tās detalizētai izpētei un sistēmisko trūkumu novēršanai.

### **Secinājumi un priekšlikumi** *Conclusions and recommendations*

Psihiskās veselības aprūpei un tās tiesiskajam regulējumam ir nepieciešami sistēmiski uzlabojumi, lai, sniedzot pakalpojumus personām ar smagām psihiskām saslimšanām un tendenci uz vardarbīgu uzvedību, varētu sasniegt nebrīvprātīgo intervencu terapeitisku mērķi un nodrošināt vardarbīgā nodarījuma prevenciju.

Nebrīvprātīgās psihiatriskās ārstēšanas gadījumā persona atrodas konfliktā ar valsti, tiek iedarbināts valstiskās piespiešanas mehānisms (“*police power*”), bet tam trūkst jēgpilna satura, nobeiguma, efektivitātes novērtējuma.

Piespiedu psihiatriskās intervences kā iekšējās drošības sastāvdaļa un cilvēktiesību aizsardzības sfēra prasa valsts uzmanību un uzraudzību.

Tiesisko mehānismu (pagaidu aizsardzība pret vardarbību, medicīniska rakstura piespiedu līdzekļi) pielietojamība un efektivitāte vardarbīgās rīcības atkārtošanās novēršanas nolūkā ir apšaubāma pret personām ar smagiem psihiskiem un uzvedības traucējumiem, invaliditāti, lemtspējas trūkumiem, nespēju vadīt savu rīcību.

Prakses uzlabošanai nozarē ir ieteicams veikt virkni pasākumu - tostarp personāla kompetenču stiprināšanu (medikamntozās ārstēšanas nozīmēšanas, lemtspējas un pacientu vajadzību novērtēšanas jomā), attiecīgo kvalitātes rādītāju

monitorēšanu, specializēto ambulatorās aprūpes programmu ieviešanu pacientiem ar smagām psihiskām saslimšanām.

Šī brīža psihiatriskās aprūpes un pacientu drošības kultūras attīstības apstākļos nebrīvprātīgi hospitalizēts pacients ir pakļauts tik augstiem drošības riskiem, kas neļauj nebrīvprātīgu ārstēšanu uzskatīt par viņa pamattiesībām vai labākajiem interesēm atbilstošu un valstij nosaka nepieciešamību ieviest pasākumus savlaicīgās brīvprātīgās ārstēšanas saņemšanas veicināšanai un nodrošināt tam vismazāk ierobežojošos apstākļus.

Jāturpina izstrādāt teorētiskās koncepcijas psihiatrijā - personas ar smagiem psihiskiem un uzvedības traucējumiem vardarbīga rīcība ir jāuzskata par novēršamo kaitējumu veselības aprūpē, no kura cieš pats pacients un viņam ir tiesības būt no tā pasargātam; jāizstrādā paliatīvās aprūpes kritēriji psihiatrijā; jāapraksta ārstēšanas mērķi un taktikas izvēle nebrīvprātīgās ārstēšanas gadījumā.

Raksts tapa ar projekta "Cilvēktiesībās balstīta pieeja pacientu ar garīga rakstura traucējumiem un ierobežotu lemtspēju ārstēšanā: tiesiskā, ētiskā un klīniskā perspektīva", Lzp-2020/1-0397 atbalstu.

### **Summary**

The paper deals with the issue of involuntary admissions – the theoretical part of the study reveals the practical ethical and clinical issues, that are common to national mental healthcare. Within the practical part, for a retrospective case series study, the data from three Latvian court cases on involuntary admissions of persons with severe mental illness and a history of violent offenses six months after discharge were collected and analyzed, and pitfalls and shortcomings were detected.

The study demonstrates that to ensure up-to-date treatment outcomes and community violence prevention major practice improvement is required. The special ("other") legal instruments – the temporary protection against violence measures are not applicable for persons with severe mental disability and the compulsory measures of a medical nature appear to be insufficient to protect from recurrent violent acts.

It is argued that involuntary mental health interventions are the state administration's task in the field of public safety and human rights.

Recommendations for practice improvement, further studies, and ethics involvement were constructed.

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# ARTIFICIAL INTELLIGENCE CONTROLLED RELAXATION SYSTEM FOR AUTISTIC CHILDREN – IT TECHNOLOGY THAT ADDRESSES SOCIAL ISSUES

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**Abstract.** *The article presents the development and research of technological tools - a relaxation system for children with autism. The article describes the means and methods of emotional stabilization of children with autism spectrum disorders. The design, operation, and control of the relaxation system controlled by artificial intelligence with image processing and machine learning are described. The relaxation effect on children is carried out with audio-musical signals, by combining them with colored light and mechanical vibration of the back area. The practical research results are described, demonstrating the system's effectiveness for children with autism spectrum disorders. Under normal conditions, if a child takes 3 to 4 hours to calm down, the relaxation system shortens this time to 10 to 15 minutes. Finally, the relaxation system controlled by artificial intelligence-based software, created by scientists from three Lithuanian universities and the students of Vilnius Kolegija, is presented as a technological tool designed to address social issues in society.*

**Keywords:** *artificial intelligence, autism spectrum disorder, emotion recognition, image processing.*

## Introduction

Social integration and emotional well-being become highly relevant issues within specific groups of people, including those with disabilities or special needs.

Currently, the integration and emotional health of children with autism spectrum disorders have become sensitive topics. Human resources, including psychologists, educators, or other specialists, are no longer sufficient with the increasing number of such individuals. It is essential to incorporate technologies based on modern science and technology to improve the emotional state of such children (Ben-Sasson et al., 2007). It is known from practice that children of this type have emotional instability and can become inactive and unproductive for long periods (e.g., during classes) or even for the entire remaining workday (Dickie, Baranek, Schultz, Watson & McComish, 2009). Typically, a child calms down by changing the environment, such as walking or staying in a quiet place. Calming down in such cases can take up to several hours, leading to the loss of a workday. Extreme cases may involve the child becoming aggressive after an emotional stimulus.

Modern relaxation methods, such as music therapy, soothing visual presentations, and relaxation in a massage chair, help reduce the time needed to calm down. However, each calming method is individual and may not suit all children (Alam, Khan & Farooq, 2018). By leveraging information technologies based on artificial intelligence and machine learning algorithms, it is possible to create individual calming scenarios for specific children and automatically react to the children's reactions (Brondino et al., 2015).

By applying artificial intelligence algorithms like those used for face recognition-based phone unlocking (Face ID) (Shah, Li, Shah, & Ullah, 2018), these same algorithms, when improved, can be applied to emotion recognition (Zhang, Zheng, Cui, Zong & Li, 2018), thereby automatically changing the scenario's impact on the individual. Such AI-controlled comprehensive relaxation systems have been developed by Lithuanian university researchers together with students. This is part of the real project "Adaptation of Specialized Smart Massage Chairs for Relaxation and Integration of Children with Autism Spectrum Disorders in the Educational Environment" (Lithuanian grand No. 01.2.1-MITA-T-851-01-0026), which involved teachers and students from Vilnius College.

The article presents only a small part of the two-year project, during which Vilnius College students gained new competencies and realized their existing skills. The technology developed during the project became one of the tools for solving social problems.

**Relevance of the Topic.** With the increasing number of children with autism spectrum emotional disorders in Lithuania and worldwide, measures are needed not only for their integration into society but also to improve their emotional well-being.

**Problem Statement.** The essence of the problem is that autistic children easily lose emotional balance, causing them to be inactive and unproductive during classes. To calm such a child, it often takes several hours or even the entire

remaining day. Therefore, there is a need to create a technological-social tool for rapid relaxation.

**Research Objective.** To create an automatic relaxation scenarios selecting system combining complex audio, visual, and massage effects aimed at helping autistic children calm down in a short time.

**Tasks:**

1. To explore the main methods of emotional calming for autistic children.
2. To create a relaxation system combining the researched methods, allowing the child to calm down in the shortest time possible.
3. To examine the effectiveness of the developed system on children and create an automatic method for selecting relaxation scenarios for individual children.

## **Methodology**

Over time, in the field of Autism Spectrum Disorders (ASD), a situation has emerged globally where these disorders are being addressed in a rather isolated manner. Well-known relaxation systems exist worldwide, with their basis being the influence of sound on physical properties (Casanova, 2007). The latest audiovisual technologies (interactive audio and video processes) provide opportunities to integrate many of these relaxation methods into one entity. With their assistance, a child can be affected not only by sound but also by enhancing its impact through sound visualization and utilizing the vibrational properties of particularly low-frequency sound. Working with visual/color material can be "enhanced" by rhythmic pulsation, aiding an anxious child in calming down and focusing. These audiovisual means can be combined with tools that help activate all possible receptors. The system of mini-computers and other control tools, along with creating a microclimate in a relatively closed space, could help customize the impact according to each child's needs. Integrating all these possibilities into one system (in this case, a relaxation system) would create opportunities to achieve results that are not possible by addressing each ASD child's emotional domain separately. The system was designed based on previous studies of children and educational robots (Costa, Steffgen, Lera, Nazarikhorrani, & Ziafati, 2017).

Therefore, it is purposeful to create such a relaxation system that would combine the three mentioned means of impacting the child and would be controlled by software capable of individualizing relaxation effects for each child separately.

Considering the available information, it can be stated that until now, there haven't been enough theoretical and practical studies that would enable the creation of algorithms capable of stabilizing the emotional state of children with autism spectrum disorders. The creation of an automatic operating system that

could react to the child's emotions and select a relaxation scenario would be a significant step in the field of science and technology both in Lithuania and globally. Taking all the information into account, a comprehensive relaxation system controlled by artificial intelligence and encompassing sensory, visual, and auditory relaxation functions was developed.

### **Realization of the Relaxation System**

Assessing the data from surveys of autistic children's parents, global practices, and the results of scientific research in this field, as well as personal experience of scientists living with such children, the functions of the relaxation system were concretized:

1. Emotional calming
2. Emotional-visual therapy

Visual relaxation is implemented comprehensively together with audio material, the combination of which is programmatically controlled. The audiovisual environment, its effects, and changes can be perceived by the user outside the system. The audio material is synchronized with colored light sources, whose intensity and color of illumination are automatically controlled according to the selected audiovisual Algorithm (Mousavi & Aghsaghloo, 2018).

3. Emotional-Auditory Therapy

In the relaxation system chair (Figure 1), a 4.1 format acoustic system is installed: two speakers at the back (at head level), two in the front (on armrests), and one low-frequency speaker. Thus, the seated individual directly feels all music or sound vibrations. This achieves a particularly strong psycho-physiological effect of sounding music or sounds (Matson, 2009), (Janzen & Thaut, 2018).

4. Massage Functions

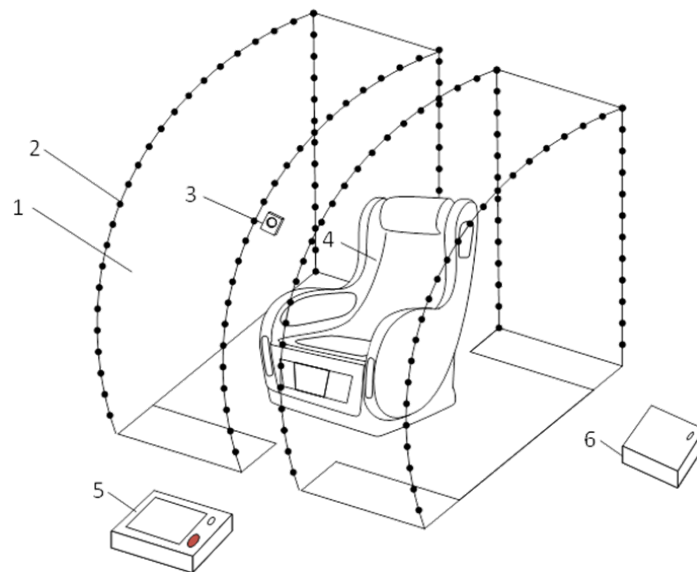
Mechanical massage effects are intended to be realized in the seating area and lower lumbar region through mechanical vibration and air cushions. Vibrations are created according to a predetermined scenario with the possibility of adapting it to the child's specific needs (Huang, Liao & Pang, 2017). Mechanical vibrational tools are programmatically synchronized with auditory effects to create a unified relaxation scenario controlled by an intellectually changing algorithm tailored to each child individually.

5. Child Monitoring in the Relaxation System:

- 5.1. Observation with Human Presence (Therapist) through the integrated camera in the system.
- 5.2. Prevention of critical cases by automatically analyzing the video. These may be preventive cases to prevent the child from getting hurt, for example, falling out of the chair.

5.3. Visual information is transmitted to the artificial intelligence method operating the emotion recognition and automatic relaxation scenario control algorithm.

Based on previously defined functions and the purpose of the relaxation system, a prototype design of the system has been developed. The components of the system are illustrated in Figure 1.



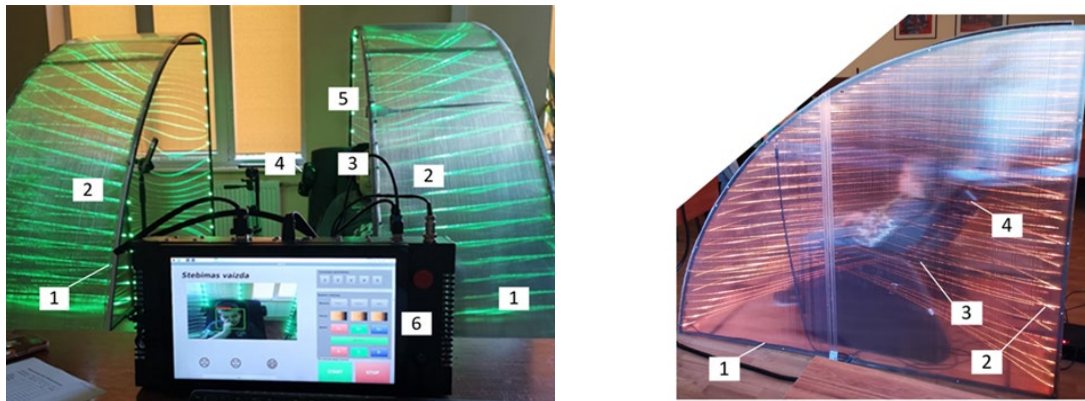
*Figure 1 Components of the Relaxation System (created by authors)*

*1 - Semi-transparent enclosure (left and right parts), 2 - System of colored light sources, 3 - Video camera, 4 - Massage chair with sound system, 5 - Control computer with a touch screen, 6 - External power source.*

The system consists of a vibrating chair (4) housing mechanical vibrational and massage functions performed by actuators and an integrated sound system. A semi-transparent enclosure surrounds the chair (1) that slides sideways, housing a system of colored light sources (2) along its edges. One of the enclosure sections contains a stationary video camera (3) designed to monitor the child's face and provide information to an artificial intelligence-driven relaxation scenario selection program. System control is facilitated through a specialized computer (5) featuring a touch screen. Power to the system is supplied via an external power source (6), which is physically distanced from the system at a safe distance, delivering non-hazardous electrical current to ensure the child's safety within the device.

The view of the relaxation system prototype during experiments is presented in Figure 2

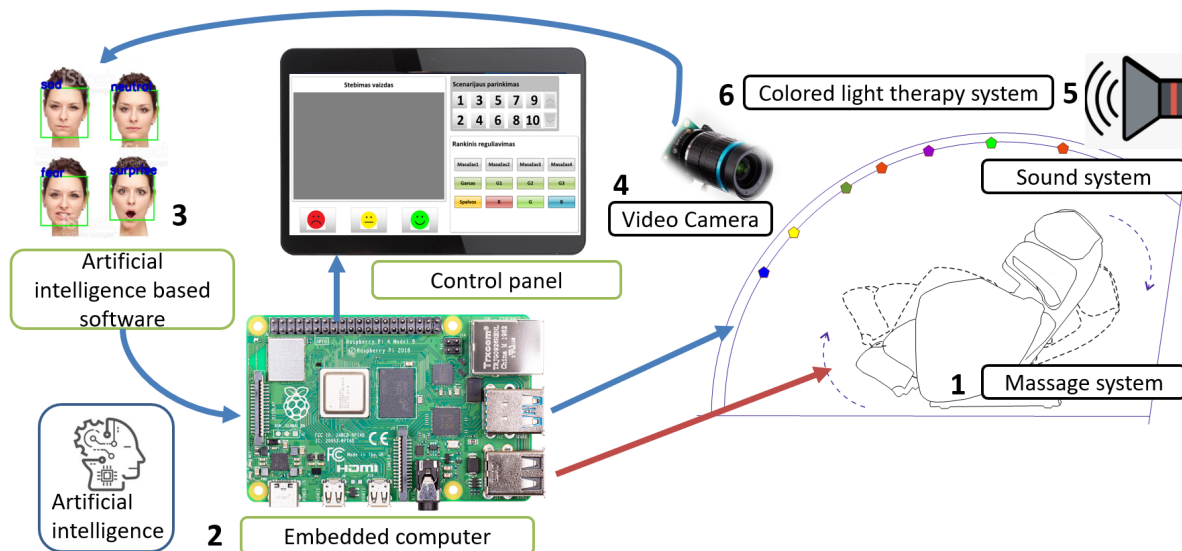




**Figure 2 Real Prototype Image with the Subject Child** (created by authors)

1 - Semi-transparent enclosure (left and right parts), 2 - System of colored light sources, 3 - Video camera, 4 - Massage chair with sound system, 5 - Control computer with a touch screen, 6 - External power source.

The essence of the system's operation lies in providing relaxation to a child experiencing emotional instability, such as agitation or anxiety, by allowing them to sit in a comfortable chair where they receive vibrational massage relaxation synchronized with soothing music and the calming effects of colored light. The child returns to emotional equilibrium after a short period, much shorter than possible under ordinary circumstances. The operation of individual components of the relaxation system is illustrated in Figure 3.



**Figure 3 Illustration of the Operation of the Relaxation System** (created by authors)

1 - Relaxation chair with massage functions; 2 - Embedded computer for data analysis and control functions implementation; 3 - Software running on the computer with artificial intelligence (AI); 4 - Video camera for monitoring the child's reactions; 5 - Sound system for auditory therapy; 6 - Coloured light system for color therapy.

The control computer (2) running software based on AI controls the system. The intelligent control program is designed to manage the massage chair functions

(1), along with auditory-musical therapy (5) and color therapy (6), creating a relaxation scenario tailored to each child individually. The software on the control computer (2), powered by AI, executes a predefined relaxation program and analyses the child's reactions to stimuli. Thus, Artificial Intelligence learns which light, music, and massage stimuli appeal to a specific child and automatically adapts the relaxation program, enhancing it accordingly (Kahou et al., 2016). The AI program also alerts the caregiver in critical situations where the child overreacts negatively. A provision for halting the relaxation program is included for unforeseen critical situations, e.g., if the child reacts negatively to relaxation techniques, the algorithm presented in Figure 4.

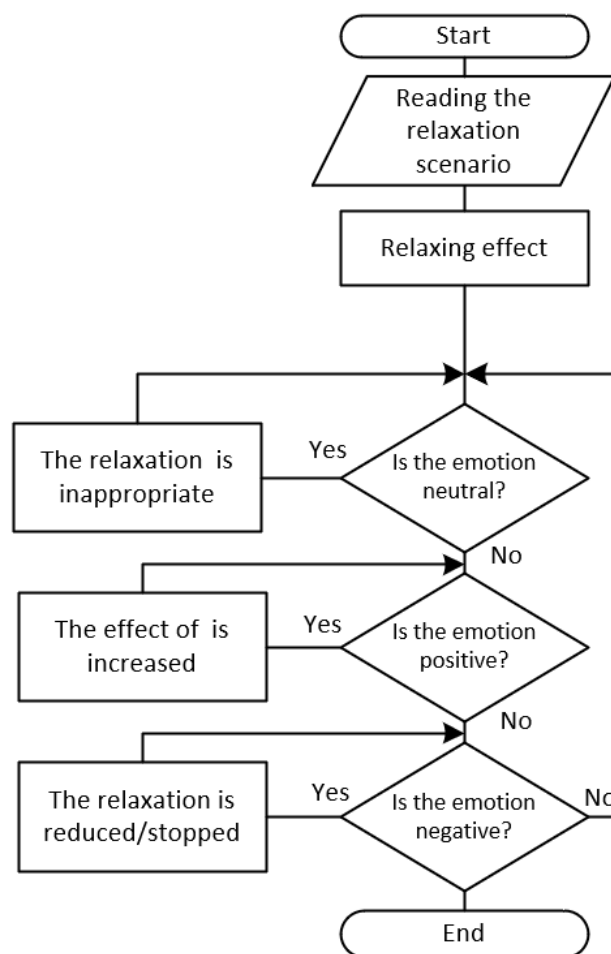


Figure 4 Algorithm for Controlling the Relaxation Scenario (created by authors)

An artificial intelligence algorithm, driven by recognized emotion models, operates by responding to changes in facial expressions (Zhang et al., 2018), (Baltrušaitis, Robinson & Morency, 2012).

Initially, a predefined relaxation scenario created by a human is scanned. After gathering the necessary data, a relaxation effect tailored to the child is generated. If the child's face displays a neutral emotion, meaning the child's

reaction to the stimulus is neutral, the parameters and intensity of the stimulus remain unchanged (He, Zhang, Ren, & Sun, 2016). The cycle continues until an emotional shift occurs. In the case of a positive emotion, the intensity of the stimulus is heightened while leaving other proportional parameters unchanged. Exiting the cycle is only possible when the child's emotional reaction to the relaxation scenario changes. Another logical condition awaits negative emotions, where the relaxation effect is reduced or, in specific cases, halted. Consequently, the system automatically responds to the child's agitation during relaxation. In the absence of emotional change, when negative emotions are absent, the cycle restarts from a neutral emotional state.

During each emotional cycle reassessment, relaxation scenarios can be adjusted by selecting the most optimal and acceptable ones for the specific child. This task is performed by another part of the program based on artificial intelligence algorithms – scenario selection, which is not elaborated upon in detail in this article.

### **Study of the Relaxation System Prototype**

Following the development of the relaxation system prototype, an evaluation of its functions was conducted.

1. The general function evaluation was performed by subjectively assessing the child's reaction to the relaxation environment.
2. Evaluation of massage functions was conducted by subjectively assessing the child's reaction to massage-vibrational effects during specific relaxation scenario executions. The effect was evaluated by analyzing the child's response based on recognized emotions.
3. The study of light and sound synthesis scenarios was conducted similarly by recording changes in the child's emotions using artificial intelligence algorithms and subjectively assessing the observations of the supervising human.

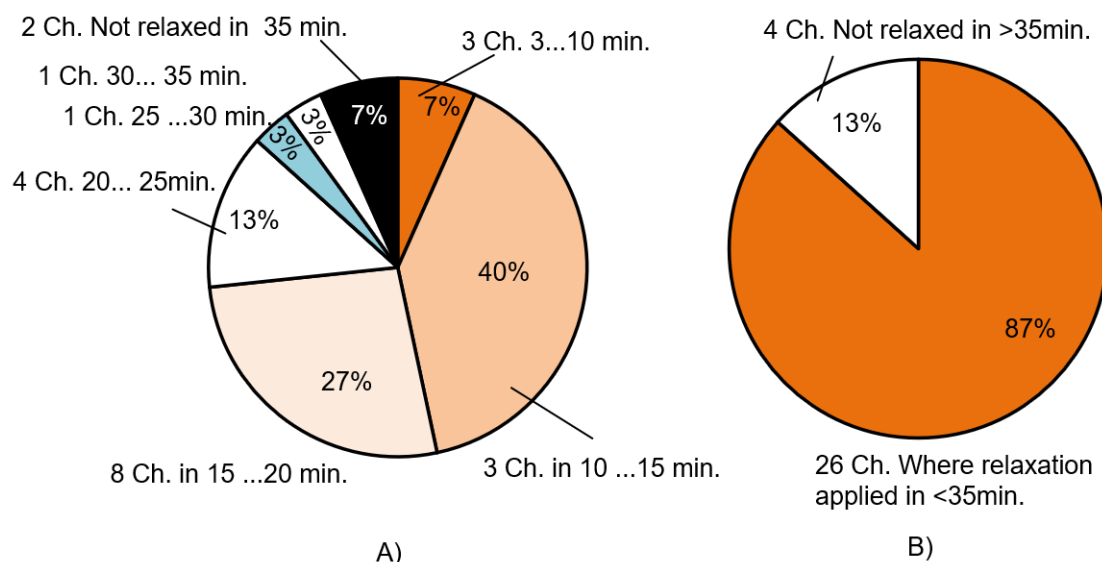
The study group comprised of 30 children. children were selected from three regions of Lithuania, 10 each, with parents' voluntary consent to participate in the study. The severity level of children's ADS was low to mild and only 2 children had a severe level. Evaluating the uniqueness of the study group, it is essential to note that due to a meticulously prepared procedure (parents and children were briefed in advance about the situation, and detailed information about the relaxation system and the research procedure was provided), most participants responded favorably. They comfortably settled into the chair and remained there for 40 minutes to an hour. While four children needed specific invitations, a few initially felt uncomfortable but later stayed in the chair for the agreed-upon time. No observable signs of aggression or outbursts of anger or aggression were reported by parents during the study. Two children initially felt hesitant or

uncomfortable or resisted the unfamiliar experience, but for the majority, the initial emotional experience was positive. According to the assessment of many parents (26 out of 30), the chair and the relaxation experience were pleasant for the children.

Most parents (26 out of 30) confirmed that the visual stimulation of different colored lights positively affected the children. Three children specifically relaxed in response to the light. The vibration was enjoyable for 24 out of 30 children, and for seven, the effects of vibration helped them relax.

Based on observations and parental feedback, clear emotional reactions to different types of music were observed. Sounds piqued children's interest and prompted activity. Familiar music also improved mood; some children swayed to the rhythm, while tranquil nature sounds helped them relax.

The effectiveness of the relaxation system is illustrated in Figure 5.



**Figure 5 The effectivity of the relaxation system**

A) - Number of children who underwent relaxation and relaxation interval in minutes.

B) - Percentage expression of relaxation efficiency

According to the initial study data (illustrated in Fig. 5), the relaxation system shows promise as a tool to meet the self-regulation, relaxation, and concentration needs of children with developmental disorders. Its sensory stimulation affects the nervous system, sometimes manifesting clear signs of nervous system recalibration and transition in children in a relatively short time, such as yawning, drowsiness, and calmness. Considering the challenges of eliciting such reactions in children with serious emotional problems, developmental disorders, and challenges, further research and development are needed to assess the effectiveness of this intervention method.

## Conclusions

Modern artificial intelligence methods enable the creation of technologies that facilitate human tasks and address specific social issues. Machine learning algorithms allow IT technology to adapt to specific human behaviors automatically. Technology that can perceive human emotions can be applied to computerized empathy, facilitating seamless human-computer interaction.

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# THE EFFECT OF SINGLE HIGH-VELOCITY, LOW-AMPLITUDE SPINE MANIPULATION ON POSTURE, FUNCTIONAL STATE OF TORSO, THIGH MUSCLES, AND VERTICAL JUMP HEIGHT

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**Abstract.** *The effects impact of single high-velocity, low-amplitude (HVLA) spinal manipulation on posture, torso, and thigh functional condition, and the height of the vertical jump have not been adequately studied. The research aims to investigate the immediate changes caused by a single spinal vertebral HVLA manipulation 3 weeks after posture, torso, and thigh muscle functional state, and vertical jump height. The study involved 46 men aged 18-25 years old who practiced indoor volleyball training at least twice a week, as well as a deviation of the vertebral vertebrae from the non-thymic position. Initially, posture was assessed using the photogrammetry method and muscle length was assessed using the goniometry method. A vertical jump height test was performed by the Sargent Jump test. A single HVLA spinal manipulation was performed by a certified chiropractor for segment correction. Then, a re-assessment of posture (photogrammetry), re-assessment of movement volume (goniometry) as well a re-assessment of vertical jump height test- the Sargent Jump test was performed. After 3 weeks post HVLA manipulation participants were retested. The main findings are: immediately after the HVLA spinal correction changes in posture were observed in all evaluated parameters, deviations from the norm decreased by  $25.45\% \pm 1.27\%$  ( $p < .005$ ), while the vertical jump height test results immediately after HVLA increased by  $4.34\% \pm 0.11\%$  ( $p < .005$ ). After 3 weeks post HVLA spine manipulation therapeutic effect was reduced by  $5.48\% \pm 1.27\%$  ( $p < .005$ ), while the Sargent Jump test result 3 weeks after manipulation decreased by  $0.05\% \pm 0.11\%$  ( $p > .005$ ). Conclusion: the persistence of the effect of a single HVLA spine manipulation was maintained for 3 weeks after the manipulation into the posture.*

**Keywords:** *manipulation, Photogrammetry, posture, vertical jump height, volleyball.*

## Introduction

Keeping physically active is important from both cultural and social perspectives. Nowadays, volleyball has grown in popularity, with around 800 million people playing it at least once a week. At both the amateur and professional levels, players pay more attention to their state of health to avoid injury and improve their physical performance (Bahr & Reeser, 2003; Verhagen,

Van der Beek, Bouter, Bahr & Mechelen, 2004; Hughes & Watkins, 2008). The ever-increasing development of volleyball as a sport is forcing volleyball players to improve themselves not only tactically and technically, but also physically. Difficult and intense training, as well as sport-specific physical activity- often lead to injuries. Injuries cannot be completely avoided, but it is possible to reduce the risk factors that can contribute to these injuries, which in turn can have a positive effect on the performance of athletes (Bahr & Reeser, 2003; Verhagen et al., 2004; Hughes, & Watkins, 2008).

Volleyball is a sport that requires a combination of strength, power, agility, and coordination. The biomechanics of the volleyball strike involve a complex interaction between the musculoskeletal components of the body, including the shoulder, elbow, wrist, and trunk (Aspegren, Hyde & Miller, 2007; Ditcharles, Yiou, Delafontaine & Hamaoui, 2017).

Due to the high demands placed on the body during volleyball, athletes may experience musculoskeletal injuries or pain, particularly in the spine. Spinal manipulation, including high-velocity, low-amplitude manipulation, has been studied for its potential benefits in improving joint function, decreasing pain, and increasing range of motion in athletes, including volleyball players.

### **Literature review**

Many authors talk about the human body as a holistic being, influencing one system will change other systems (Frost, 2002; Lewit, 2005; Galeja, 2015).

Many books and studies have mentioned how reduced body mobility and stability of volleyball players can be a contributing factor to a variety of injuries, such as ankle sprains, and cross-ligament injuries. The most common overload injuries in volleyball are patellar tendinitis and functional problems in the shoulder joint (tendonitis, rupture, etc.). Of course, lumbar, and lower limb overloads cannot be forgotten either Based on these studies, we can conclude that many injuries can be prevented by correcting the functional state of the body (Bahr & Reeser, 2003; Verhagen et al., 2004; Hughes, & Watkins, 2008).

The results of researches show the influence of various manipulations and exercises on the mobility, stability, and height of the vertical jump of volleyball players (Leporace et al., 2011; Sharma, Geovinson & Singh Sandhu, 2012; Pedak, Port, Rannama & Bazanov, 2019; Gouttebarga, van Sluis, Verhagen & Zwerver, 2017). During the training process, deviations in the functional state of the athlete's musculoskeletal system from the optimal position are often associated with soft tissue overload, which can lead to incorrect loading of the involved joint in both statics and dynamics. The above factors can lead to functional restrictions and block the movements of improperly loaded joints. Soft



tissue and joints are the functional limitations and blocks of these joints so that the specific segment can function optimally (Learman et al., 2009).

High-velocity, low-amplitude (HVLA) manipulation has been studied for its effects on athletes' mobility and stability. A randomized pilot study found that HVLA applied to the thoracic spine increased spine mobility, but this increase in mobility did not lead to improved gait initiation performance, such as speed and step length (Ditcharles, Yiou, Delafontaine & Hamaoui, 2017); Shin, Kim, Jung, Cho, & Hahm, 2020).

Recent research on spinal manipulation in volleyball includes a study that investigated the effects of high-velocity, low-amplitude manipulation on a female collegiate volleyball player with thoracic outlet syndrome. The study found that the manipulation led to significant improvements in the player's symptoms and functional ability (Aspegren et al., 2007).

A more recent study investigated the effects of a single session of spinal manipulation on strength and cortical drive in elite Taekwondo athletes. The study found that the manipulation increased muscle strength and cortical drive to ankle dorsiflexion, with the effects lasting for at least 60 minutes (Christiansen et al., 2018). These studies suggest that spinal manipulation may have beneficial effects for athletes, but further research is needed to fully understand its mechanisms and potential benefits in this context.

In summary, HVLA manipulation can increase spine mobility, but its effects on athletes' mobility and stability during sports performance are not yet fully understood. Further research is needed to clarify the mechanisms and benefits of HVLA in this context.

The aim of the research is to study the immediate changes caused by a single HVLA C6-Th2 spine manipulation and the persistence after 3 weeks on posture, torso and thigh muscle length, and vertical jump height.

## **Methodology**

The study involved 46 men aged 18-25 years old. **Inclusive criteria** for volleyball players who practice volleyball training at least twice a week or more and play for more than 5 years. Also, the volleyball player has been diagnosed with changes in posture from the correct posture from the correct posture pattern and neck, and functional abnormalities of C6-Th2 vertebrae. **Exclusive criteria:** History of spinal and shoulder injuries (fractures, dislocations of the joints, chronic instability, damage of the soft tissues and ligaments of the surrounding structures). No symptoms of "Red Flag" (sudden abdominal pain, bleeding, fever, etc.); play volleyball less than 2 times a week; Contraindications for spinal manual therapy (HVLA) tumors of the joints, limbs, or internal organs; non-

specific infectious processes in the spine, joints; acute and subacute inflammatory disease of the joints.

The research took place when the participants or the research (volleyball players) did not have active physical training, so the obtained results would not be affected to the maximum.

All these experiments took place in the Scientific Lab of Physiotherapy, Latvian Academy of Sport Education, Riga, Latvia. Hygienic conditions of the room, i.e. room temperature 18-20 ° C and natural light, were provided during the study. Ethical approval Nr.130/47813 by LASE.

**Measures and procedures:** The research took place at the Scientific Lab of Physiotherapy, Latvian Academy of Sport Education, Riga in 2021.

Participants were assessed for posture, torso, and thigh muscle lengths, and vertical jump height. After the initial assessment, participants underwent a single C6-Th2 HVLA spinal manipulation. A certified manual therapist with experience in this field performed a single C6-Th2 segment HVLA manipulation of the spine in flexion concerning the material developed by the author Karl Lewit in manual therapy (Lewit, 2005).

After the spinal manipulation, the participants were in a spine position for 15 minutes, after which the participants were re-evaluated. After 3-week post-manipulation, participants were re-evaluated to see if the changes in the body caused by the manipulation had been maintained or returned to their original condition.

Postural parameters were evaluated using the photogrammetric method. The purpose of photogrammetry measurements is to obtain accurate measurements from reference points located on any fixed object. Participants were attached to specific anatomical points with circular markers 2 millimeters in diameter, exactly at the center of the specific anatomical point. This activity was performed by a researcher experienced in this research method. 3 photos were taken - in the frontal and posterior planes, as well as in the sagittal plane. The obtained photo images were processed using a special computer program ArchiCAD23. In which the angular deviation from the correct posture pattern in statics was obtained (Hoppenfeld, 1976; Kendall, McCreary, Provance, Rogers & Romani, 2005; Galeja, 2015).

The amplitude of the movements was measured using the goniometric method. A calibrated Baselin AcuAngle Inclinometer (Japan) and a standardized test were used to estimate the amplitudes of the movements, as the accuracy of the data obtained is important to ensure that the results obtained from repeated measurements are comparable with the original data. To increase the accuracy of the measurements (measurement accuracy  $\square 1 \square$ ), the operating instructions of the manufacturer's goniometer were followed, considering the following additional conditions: the measurement conditions were maximally standardized;

the research and data processing were carried out by the same person with experience in this field (Kendall et al., 2005).

Standardized muscle tests were used: m.quadratus lumborum; m.rectus femoris; and hamstring muscle group.

*Tests m. quadratus lumborum*

The subject is standing, feet together, arms along the sides. The axis of the goniometer pendulum is placed in the horizontal plane on the surface of the skull to be examined, at the point of the vertical axis. The subject performs maximal torso lateroflexion, the goniometer reads the indicated amount of movement in degrees. The examiner monitors the movement of the test subject in the frontal plane (Kendall et al., 2005).

*Tests M. rectus femoris*

The subject is lying on his stomach, on a couch, resting on his forehead. The goniometer is placed on the outer surface of the lower leg. The test subject performs maximum flexion of the knee. The inspector shall ensure that the movement is correct and that no compensating mechanisms are involved. The goniometer reads the amount of motion shown in degrees (Kendall et al., 2005).

*Test for a group of hamstring muscles*

The subject is lying on his back on a couch. The axis of the goniometer pendulum is placed parallel to the body on the anterior surface of the thigh. Test the maximum lift of the straight leg. The magnitude of the indicated movements in degrees is read on the goniometer. The examiner observes that the knee is not flexed and that no rotation is observed in the foot (Kendall et al., 2005).

The Sargent Jump test, or vertical jump height assessment test, basically involves the difference between two indicators - the person's highest possible height that can be reached in an upright position and the height that that person can reach when jumping. This difference is expressed in centimeters (cm) (de Salles, Vasconcellos, de Salles, Fonseca & Dantas, 2012).

Description of standardized tests:

1. The test subject is free to stand as far as possible with the leading hand without lifting the heels off the ground. The result is recorded in centimeters (cm).

2. The test person makes a maximum jump upwards. The result is recorded. The jump is repeated 3 times (with a 3-minute break between jumps).

3. The best result shown is taken - in centimeters (cm).

4. The result of the upward stretch is subtracted from the best vertical jump result obtained and the height of the vertical jump is obtained (de Salles et al., 2012). The measurement characteristics were recorded and processed by the same researcher with experience in such studies. The test subject performed continuous dynamic warm-ups before the test to demonstrate maximum performance.

The methods described in the study were used before a single spinal vertebral C6-Th2 manipulation and were repeated 15 min after the manipulation and after 3 weeks. All 3 evaluations were performed by the same researchers with experience in specific studies (Ianuzzi & Khalsa, 2005; Edmond, 2006; Millan, Leboeuf-Yde, Budgell, Descarreaux, & Amorim, 2012).

**Statistical analysis:** The data obtained in the research experiments were processed with Microsoft Office Excel and SPSS statistical analysis software. In the first stage, descriptive statistics and the Shapiro-Wolf test were used for data processing to determine the conformity of the data to the normal distribution (confidence interval  $p < 0.05$ ), based on which other mathematical-statistical methods were selected for further data processing.

Student's t-test for related sets was used to process the data obtained (data correspond to normal distribution). The significance level of the results ( $p$ ) was chosen to be  $p \leq 0.05$  (Galeja, 2015).

### Research results

Analyzing and comparing the results obtained 15 min after a single spinal manipulation and 3 weeks after manipulation of the initial data, we found that the evaluated muscle length tests, posture stereotype parameters, and vertical jump test show changes in the results. Examining the initial results and the results obtained immediately after the manipulation, we found that there were statistically significant changes in all evaluated parameters ( $p \leq .005$ ). After 3 weeks, the endpoints still did not return to baseline, indicating persistence of exposure, but statistically significant changes in muscle length tests and some postural stereotype parameters remained ( $p \leq .005$ ) (Table 1).

*Table 1 Results in the range of motion, posture, and the height of the vertical jump before, after, and 3 weeks after a single spinal C6-Th2 HVLA manipulation*

Test	Before	After	$p$	After 3 weeks	$p$	$r$
ML Torso lateroflexion to right	16.9°±1°	20°±1°	.001	19°±1°	.001	.200
ML torso lateroflexion to left	16.95°±1°	22°±1°	.001	19°±1°	.001	.201
ML m.rectus femoris right	120.6°±1°	129°±2°	.004	125°±1°	.003	.460
ML m.rectus femoris left	122°±1°	128°±2°	.005	124°±2°	.003	.399
ML mm.hamstring right	81°±3°	85°±3°	.004	84°±3°	.004	.142
ML mm.hamstring left	79°±3°	85°±3°	.004	84°±3°	.004	.214
SJT	46±2cm	49±2 cm	.001	48±2 cm	.091	.161
A Masteideus	2.34°±0.21°	1.50°±0,21°	.001	1.77°±0.17°	.001	.671
A Acromion	1.58°±0.18°	1.23°±0,19°	.001	1.31°±0.17°	.101	.381
A Crista iliaca	2.07°±0.26°	1.55°±0,23°	.001	1.76°±0.22°	.002	.292

A Trochanter major	1.70°±0.14°	1.43°±0,15°	<b>.002</b>	1.47°±0.1 3°	.183	.376
A Angulus superior scapulae	3.79°±0.5°	2.78°±0,46°	<b>.003</b>	2.92°±0.4 5°	<b>.002</b>	.433
A Angulus inferior scapulae	3.33°±0.43°	2.44°±0,47°	<b>.001</b>	2.83°±0.4 1°	<b>.002</b>	.260
A Tuber ischiadicum	1.28°±0.13°	1.09°±0,14°	<b>.001</b>	1.17°±0.1 3°	.174	.184
A the corner of the eye against the outer opening of the ear	20,38°±1.48°	15.97°±1,43°	<b>.004</b>	15.73°±1. 18°	.173	.769
A yoke notch against Th1	21.38°±1.1°	17.53°±1°	<b>.003</b>	17.71°±1. 03°	.181	.421

*Note.* Before = results before a single manipulation of the spinal segment C6-Th2. After = results immediately after a single manipulation of the spinal segment C6-Th2. After 3 weeks = results 3 weeks after single manipulation of spinal segment C6-Th2. *r* = effect size. ML = amplitude of motion goniometry (for a specific group of mm). SJT = Sergent Jump test (vertical jump height cm). A = deviation of a particular posture anatomical point from the correct posture pattern. *p* = Statistically significant *p* values are in boldface.

## Discussion

The main benefit of our study is that changes in the evaluated parameters were observed. Comparing the initial results with the results obtained 15 minutes after the HVLA, we found that the amount of movement increases in the muscle length tests and the vertical jump test, while we observe a decrease in deviations from the norm in the parameters characterizing the posture. Changes in results are statistically significant  $p \leq .005$  (Table 1).

Looking at the results, which characterize the changes caused by manipulation after 3 weeks, we see that they tend to deteriorate, but in none of the evaluated parameters, the results have returned to the initial state. Statistically significant changes in the results were maintained in the muscle length tests and, in some parameters, characterizing the posture stereotype (Table 1).

Scientific research into the effects of manual therapy and manipulation on the human body is increasingly being carried out. These studies show similar nuances in the rationale for research. Most of the authors attribute the mechanical effect of the manipulation on the spine to the irritation of the neural component in the capsule sac, which in turn causes the reflection of the reflectors in the surrounding tissues. Manipulation promotes changes in the reflex of neuromuscular regulation, which in turn elicits body responses that can be assessed in the static or posture of the subject, but establishes the fact that this effect of corrective manipulation is transient (Pedak et al., 2019; Gouttebauge et al., 2017; Nagy, Müller, Birö, Eszter & Iuliana, 2017). The results of our study show that immediately after the manipulation, the deviations of the posture from the correct posture pattern were reduced by  $25.45\% \pm 1.27\%$  ( $p = .001$ ). They are confirming what other researchers have said about the instantaneous and transient effects of manipulation (Ferreira, Ferreira, Latimer, Herbert, & Maher 2003; Ernst, 2007; George, Bishop, Bialosky, Zeppieri & Robinson, 2006; Häkkinen,

Salo, Tarvainen, Wirén & Ylinen, 2007; Bicalho, Setti, Macagnan, Cano & Manffra, 2010; Bishop, Beneciuk & George, 2011; Schulz et al., 2014).

In turn, our study also found that 3 weeks after a single spinal C6-Th2 manipulation, the effect of the therapeutic effect on the parameters characterizing the stereotype was maintained. Comparing the results, we find that the effect of the therapeutic effect is  $19.97\% \pm 1.27\%$  or decreased by  $5.48\%$  within 3 weeks ( $p = .001$ ).

Scientific research on the effect of manipulation on vertical jump height in young athletes with talocrural joint dysfunction yielded the following results. After manual correction, study participants ( $n = 11$ ) showed an increase in vertical jump of  $1.07 \pm 1.23$  cm ( $p = .017$ ). The results of the above studies show similarities with the results of our study on the results of the vertical jump of the Sergeant Jump test in the study participants. Participants in our study showed a pre-HVLA vertical jump of  $46 \pm 2$  cm, whereas immediately after HVLA  $49 \pm 2$  cm ( $p = .001$ ) and a 3-week post-HVLA result was  $48 \pm 2$  cm ( $p = .161$ ). These results confirm the transient effect of a single HVLA effect on vertical jump parameters (Hedlund, Nilsson, Lenz, & Sundberg, 2018).

As previously mentioned, the neuroreflective and neurophysiological effects of manual therapy on the joint capsule and surrounding tissues, surrounding muscles, and the segment. The authors confirm that this manipulative effect does not always have a sufficiently large positive effect on the functional segments, which, for example, is very important for athletes in terms of the optimal amount of movement in a particular segment. Thus, the researchers confirm that in addition to the manipulative effects on the joints, other manipulative effects on the surrounding tissues (massage, active stretching, exercises) are needed to optimize the volume of movement in the larger segment (Schmid, Brunner, Wright & Bachmann, 2008; Sharma et al., 2012; Pedak et al., 2019; Gouttebauge et al., 2017; Nagy et al., 2017).

Studies have shown that various functional disorders in the body (trigger points, increased mm. tonus, incorrect loading of the joint sac) contribute to the functional dysfunction of the reflectors in certain segments and can promote the formation of functionally weak muscles. The definition of a functionally weak muscle refers to a muscle that is functionally weak if it is unable to function autonomously in optimal situations. Under optimal conditions, the body can transfer conscious movement autonomously to the cerebral cortex system. The miotic reflex characterizes this process. When a particular movement occurs at a subconscious level, the body can act at a conscious level in another direction at the same time, maintaining the quality and efficiency of the movements at an unconscious level. With the appearance of external or internal unnecessary irritation or stress, this subconscious function can be disrupted, because of which the muscle no longer works in an autonomous state and moves to a partial level

of consciousness, resulting in inhibition of the miotic reflex (Cappabianca et al., 1999; Kibble, Halsey Colby, 2009; Ozols, 2020).

The common feature of the entire nervous system is the transmission of external environmental information to the internal environment to optimize the body's function for the changing external and internal stimuli. The spinal nerve roots and spinal cord are the carrier of information to the central nervous system. Each of the thirty-one nerve roots has a specific innervation zone and several specific motor units in the body that are most directly associated with a particular spinal nerve root (Frost, 2002; Ramšak & Gerz, 2005; Rokni & Sompolinsky, 2019; Pickar, 2012). Given the variety of information provided by studies in physiology, biomechanics, and anatomy, neurology can judge an organism as a holistic unit, which is also confirmed in our study. The therapeutic effect of a single HVAL was observed in the body as a whole, both in the increase in muscle length in the muscle length tests (m.quadratus lumborum, m.rectus femoris, and hamstring group) and the decrease in asymmetry. The results of our study demonstrate the persistence of single HVAL effects, as after 3 weeks, statistically significant changes in results ( $p \leq .005$ ) persisted in muscle length tests and some postural stereotype parameters.

An increasingly important issue in research is the development of sports, and how to increase the athlete's working capacity or performance using the available methods, techniques, and current resources. This research stimulus encourages researchers to seek new approaches to changing the regulation of the human body. Holistic, systematic, and multidisciplinary approaches to this process are increasingly being sought in modern research. This type of approach can provide athletes with fast, fast, functional results with the lowest possible risk of injury and strain, which is very important. This is due to the high demands of sports, high competition, and the unimaginably wide availability of resources for athletes (from medical staff, coaches, fitness coaches, psychological fitness coaches, nutritionists, and other professionals). Thus, many authors acknowledge the need for a multidisciplinary holistic approach to functional capacity enhancement (Borsa, Laudner & Sauers, 2008; Cech & Martin, 2012; Johnson, 2016; Botelho, Alvarenga, Molina, Ribas & Baptista, 2017; Hedlund et al., 2018; Christiansen et al., 2018; Bunn, Rodrigues, & Bezerra da Silva, 2019).

## **Conclusions**

Statically significant changes in results can be observed using spinal C6-Th2 vertebral manipulation ( $p < .005$ ). muscle length tests (m.quadratus lumborum, m.rectus femoris, and hamstring group) in the vertical jump test and posture stereotypical parameters in the frontal and sagittal planes.

On the other hand, when analyzing the persistence of manipulation-induced changes after 3 weeks, statistically significant results ( $p \leq .005$ ) remained in

muscle length tests and some postural stereotype parameters, suggesting that manipulation-induced reflex changes in neuromuscular regulation are transient in explosive force.

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# SEJAS MASKU IETEKME UZ KARDIORESPIRATORIEM RĀDĪTĀJIEM SLODZES VELOERGOMETRIJAS TESTA LAIKĀ

## *Effects of Face Masks on Cardiorespiratory Parameters During Exercise Veloergometry Test*

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**Abstract.** The COVID-19 pandemic has sparked ongoing scientific discussions about the adverse effects of wearing face masks on cardiorespiratory indicators, and the subjective response to exertion. Many researchers have investigated the impact of wearing face masks on different physiological factors through various exercise routines, such as a progressive cycling test, the 6-minute walk test, and treadmill walking at a constant pace, yielding inconsistent findings. This study aimed to examine the physiological and perceptual responses of wearing surgical face masks during and after the veloergometry test. Fifteen healthy young adults (mean age,  $26.8 \pm 4.4$  years, 5 males and 10 females) conducted the Astrand-Rhyming veloergometry protocol twice (with and without masks). Physiological outcomes (heart rate, maximal oxygen uptake, and oxygen saturation level), perceived exertion, and discomfort feeling by modified Borg scale were assessed. No significant differences were observed in physiological outcomes with or without masks during increasing load intensities ( $p > 0.05$ ) except for the last minute of testing and the minute after testing ( $p \leq 0.005$ ). Participants wearing masks reported the tendency of higher exertion level ( $3.8 \pm 1.08$  vs  $4.4 \pm 0.9$ ) but statistical analysis can't definitively confirm it. While exercising with a face mask may not adversely affect cardiorespiratory factors, it can elevate perceived exertion levels and discomfort, particularly when exercise intensity exceeds a certain threshold.

**Keywords:** adults, cardiopulmonary exercise test, exertion, face masks.

### **Ievads**

#### **Introduction**

Balstoties uz Latvijas Republikas Ministru Kabineta noteikumiem Nr. 662 "Epidemioloģiskās drošības pasākumi Covid-19 infekcijas izplatības ierobežošanai", Veselības aprūpes pakalpojumu sniegšanas vietās ir nepieciešamas lietot sejas maskas ārstniecības iestādes apmeklētājiem, ambulatoro veselības aprūpes

pakalpojumu saņēmējiem, izņemot gadījumu, ja sejas maskas lietošana nav iespējama (Ministru kabinets, 2021).

Vairāki pētījumi atklāja N95 un medicīnisko masku ietekmi uz kardiorespiratoriem rādītājiem (forsētas izelpas tilpuma, izelpas maksimumplūsmas, maksimāla slodzes jauda, plaušu ventilācijas, laktāta maksimālā līmeņa rādītāji bija zemāki ar masku) un subjektīvu atbildes reakciju uz slodzi (Epstein et al., 2021; Fikenzer et al., 2020; Shaw, Butcher, Ko, Zello, & Chilibeck, 2020).

Audumu masku lietošana slodzes laikā noved pie slodzes tolerances samazināšanās, kardiorespiratorās sistēmas funkciju samazināšanās, kā arī negatīvi ietekmē subjektīvas piepūles novērtējumu (Driver, et al., 2022).

Daudzās publikācijās tika akceptēts, ka ir nepieciešama turpmāka, ar sejas maskām saistīta, pētījumu veikšana, lai noteiktu sejas masku ietekmi uz ikdienas aktivitātēm, augstas intensitātes fiziskām aktivitātēm, dažāda veida un materiāla masku efektu uz kardiorespiratorās sistēmas rādītājiem (de Souza E Silva et al., 2018; Fikenzer et al., 2020; Scheid, Lupien, Ford, & West, 2020).

Pētījuma mērķis ir noteikt sejas masku ietekmi uz kardiorespiratorās sistēmas rādītājiem veloergometrijas slodzes testa laikā un pēc tās.

### **Sejas masku ietekme uz kardiorespiratoriem rādītājiem slodzes ergometrijas testa laikā**

#### ***Physiological Changes During Aerobic Exercise Affected by Face Masks***

Pasaules veselības organizācija 2020. gada 11. martā pasludināja SARS-CoV-2 uzliesmojumu par globālu pandēmiju, kā rezultātā daudzas pasaules valstis ieviesa dažādus preventīvus risinājumus pandēmijas samazināšanai - izolācija, distancēšanās, kā arī sejas masku lietošana neatkarīgi no cilvēka ikdienas darbībām, dzīves ritma. Vairāku profesiju pārstāvji sastapās ar sejas masku lietošanu, kas līdz šim nav bijusi aktuāla. Piemēram, pacienti, kuri apmeklēja fizioterapijas nodarbības, cilvēki fitnesa zālēs, sportisti fiziskās slodzes laikā bija spiesti lietot sejas maskas (Ministru kabinets, 2021). Tāpēc Latvijas sabiedrībā radās dažādi jautājumi, kā sejas masku lietošana ietekmēs, vai kādas izmaiņas radīs cilvēku veselībā.

Ķirurģisko masku lietošana nodrošina to, ka tās lietotājs neinficēs apkārtējo vidi, jo maskas samazina infekciozo aģentu transmisiju. Par cik šīs maskas ir veidotas drošai lietošanai, tās atbilst ES Regulācijai 2017/745 ar grozījumiem un tām jābūt ražotām saskaņā ar tehniskajiem standartiem. Šie tehniskie standarti nodrošina funkcijas un testēšanas metodes, lai novērtētu šādu parametru prasības:

- baktēriju filtrēšanas efektivitāti (BFE);
- elpojamība;
- aizsardzība pret šļakatām (ķermeņa šķidrums);
- mikrobu tīrība (bioslodze) (European Commission, 2020).

Ņemot vērā ar COVID-19 pandēmiju saistīto subjektu, kas lieto sejas maskas, skaita palielināšanos, tika veikti vairāki pētījumi, kuru mērķis bija noskaidrot šādu masku lietošanas fizioloģiskos efektus to lietotājiem. Būtisks aspekts ir ķirurģisko masku un FFP2/N95 respiratoru efekta uz kardiorespiratoru kapacitātes salīdzināšanas rezultāti: tika noskaidrots, ka FFP2/N95 respiratoru lietošana ir asociēta ar augstāku maksimālo skābekļa patēriņa ( $VO_2max$ ) samazināšanos, nekā ķirurģisko masku lietošana (Prado, Silvino, Motta-Santos & Dos Santos, 2022; Rakita, Nikolić, Mildner, Matiassek & Elbe-Bürger, 2020; Epstein et al., 2021; Shaw et al., 2020; Mapelli et al., 2021; Otsuka, Komagata & Sakamoto, 2020). Tāpat arī laboratorisko analīžu dati liecina par N95 tipa un citu medicīnisko masku negatīvu ietekmi uz kardiorespiratoriem rādītājiem (forsētas izelpas tilpums, izelpas maksimumplūsma, maksimāla slodzes jauda (W), plaušu ventilācija, laktāta maksimālā līmeņa rādītāji bija zemāki ar masku) un subjektīvu atbildreakciju uz slodzi (Epstein et al., 2021; Fikenzer et al., 2020; Shaw et al., 2020).

Ķirurģiskās maskas lietošanas ietekme uz laktāta sliksni veseliem indivīdiem, norāda uz to, ka kardiorespiratorās slodzes testēšanas laikā ķirurģiskās maskas izmantošana nepalielina laktāta sliksni augstāk, nekā slodzes testa veikšana bez maskas. Dalībnieku galvenā subjektīva atradne bija elpošanas diskomforts, lietojot sejas masku slodzes laikā (Prado et al., 2022; Rakita et al., 2020; Epstein et al., 2021; Shaw et al., 2020; Mapelli et al., 2021; Ostuka et al., 2020).

Pētījumu dati ir nevienozīmīgi, piemēram, Rakita et al., 2020, Epstein et al., 2021 un Shaw et al., 2020, kuros netika konstatēta statistiski būtiska atšķirība subjektīvas piepūles novērtējuma rezultātos ar un bez sejas maskas slodzes laikā (Prado et al., 2021, Mapelli et al., 2021 un Ostuka et al., 2020, kas analizēja šo jautājumu, demonstrē subjektīvas piepūles novērtējuma rezultātu pieaugumu subjektīviem, kas izmantoja sejas maskas slodzes laikā. Augstāk minētajos pētījumos ir minēts, ka sejas maskas izmantošana, veicot fiziskās aktivitātes, tiek uzverta kā subjektīvi nekomfortabla, kas savukārt negatīvi ietekmē slodzes toleranci. Faktori, kas ir saistīti ar paaugstinātu subjektīvas piepūles novērtējumu, ir: apgrūtināta elpošana, paaugstināta temperatūra un mitrums zem maskas, maskas ciešs kontakts ar seju un vispārējais diskomforts (Prado et al., 2022; Rakita et al., 2020; Epstein et al., 2021; Shaw et al., 2020; Mapelli et al., 2021; Ostuka et al., 2020).

Pētījumos ir konstatēts dispnojas pieaugums ar ķirurģisko sejas masku salīdzinot ar stāvokli bez ķirurģiskās sejas maskas. Mehānismi, kas ietekmēja dispnojas pieaugumu, veicot slodzi ar sejas masku, nav līdz galam noteikti. Tomēr, balstoties uz darbu rezultātiem var pieņemt, ka tādi faktori kā apgrūtināta elpošana, paaugstināta temperatūra un mitrums zem maskas, maskas ciešs kontakts ar seju un vispārējais diskomforts var būt saistīti arī ar lielāku elpošanas

diskomforta uztveri (Fikenzer et al., 2021; Hopkins et al., 2021; Prado et al., 2021).

Veicot gāzu apmaiņas analīzi, tika noteikts, ka N95 respiratoru izmantošana slodzes laikā samazina skābekļa saturāciju asinīs un palielina izelpas CO<sub>2</sub> līmeni. Citi pētījumi liecina, ka respiratoru izmantošana neizraisa skābekļa saturācijas izmaiņas asinīs. Pētījumi neatklāj skābekļa saturācijas samazināšanās vienas stundas iešanas testā subjektiem, kas izmantoja respiratorus ar N95 aizsardzības līmeni salīdzinājumā ar to subjektu rezultātiem, kas neizmantoja maskas (Roberge et al., 2013). Pētījumos neapstiprina oglekļa dioksīda spiediena (PaCO<sub>2</sub>) palielināšanos viriešiem, kas izmantoja ķirurģiskas vai N95 sejas maskas vairāku pakāpju veloergometrijas testa laikā (Fikenzer et al., 2020).

## **Metodoloģija** *Methodology*

Pētījums tika saskaņots un veikts atbilstoši LSPA Ētikas lietu komisijas izsniegtajam atzinumam Nr. 130 / 47813. Pētījuma konstatējošais eksperiments tika realizēts 2022. gada maija mēnesī.

Pirms datu ievākšanas un apstrādes, respondenti tika informēti par brīvprātīgu piedalīšanos pētījumā. Pētījuma dalībnieki: cilvēki vecumā no 18 līdz 40 gadiem, kas tika atlasīti pēc iekļaušanas/izslēgšanas kritērijiem.

Metodes: Astranda-Rhyming veloergometrijas protokols; sirdsdarbības frekvences (SF), skābekļa saturācijas (SpO<sub>2</sub>), arteriālā asinsspiediena noteikšana (TA<sub>sist</sub> / TA<sub>diast</sub>) un modificētā Borga skala.

Pētījumā piedalījās 15 dalībnieki (5 vīrieši un 10 sievietes) ar vidējo vecumu 26,8±4,4 gadi, vidējais dalībnieku augums bija 173,6±7,85 cm, vidējais svars bija 71,3±12,3 kg. Testēšana notika divas reizes – ar un bez ķirurģiskās sejas maskas.

Pirms pētījuma uzsākšanas dalībnieki aizpildīja anketu, kurā bija nepieciešams atzīmēt iepriekš bijušas vai esošas saslimšanas, kas potenciāli varēja kalpot kā kontrindikācijas kardiopulmonālā testa veikšanai un to, vai dalībnieks smēķē. Nevienam no dalībniekiem nav atzīmējis ka smēķē. Par izslēgšanas kritērijiem no pētījuma tika uzskatīti SpO<sub>2</sub> miera stāvoklī <90%, SF >130x/min un <40x/min, TA<sub>sist</sub> <180 mmHg, TA<sub>diast</sub> >100 mmHg, nogurums miera stāvoklī >5 balles pēc modificētas Borga skalas.

Pētījumā iesaistīto dalībnieku testēšana notika divos etapos:

- testēšana bez ķirurģiskās sejas maskas;
- testēšanas ar 3 slāņu ķirurģiskas sejas maskas ar aizsardzības pakāpi IIR ABENA (Zhende Medical Co., Ltd. China).

Pirms testēšanas tika novērtēta subjekta sirdsdarbības frekvence, skābekļa saturācija, arteriālais asinsspiediens un novērtēta dalībnieka noguruma pakāpe pēc modificētas Borga skalas (Tobase, 2023). Pēc vitālo rādītāju un noguruma pakāpes noteikšanas eksperimenta subjektam bija jāveic 10 minūšu dinamiskā

stiepšanās un iesildīšanās atbilstoši personiskajām vēlmēm. Pēc iesildīšanās dalībnieks veica slodzes testu uz veloergometra. Testēšanai tika pielietots Astranda-Rhyning veloergometrijas protokols ar sākuma jaudu 150W vīriešiem un 100W lielu jaudu sievietēm (Bruce, Kusumi & Hosmer, 1973; Hill & Timmis, 2002). Slodzes jauda bija nemainīga pie nosacījuma, ka pēc 2 minūtēm testējamais subjekts sasniedza mērķa sirdsdarbības frekvenci diapazonā no 125 līdz 170 sitieniem minūtē. Braukšanas ātruma kritērijs: 55 –65 apgriezieni minūtē. Ja pēc 2 minūtēm netika sasniegta mērķa sirdsdarbības frekvence, testēšanas jauda tika palielināta par 25W un tests tika pagarināts par 1 minūti. Sirdsdarbības frekvence (SF, x/min) un skābekļa saturācija (SpO<sub>2</sub>, %) tika noteikta pirms testēšanas, katrā nākamajā minūtē testa laikā un uzreiz pēc slodzes. Dati tika mērīti, izmantojot Contec CMS50D1 pirksta pulsioksimetru. Pirms un pēc slodzes testējamiem subjektiem tika lūgts noteikt noguruma pakāpi. Kopējais slodzes laiks tika definēts, kā laiks no slodzes uzsākšanas līdz slodzes veloergometrijas testa beigām. Datu apstrādei tika izmantota matemātiskas statistiskas metodes (*aprakstošā statistika, Šapiro –Vilka tests, datu normālā sadalījuma noteikšanai, T-tests , rezultātu izmaiņu ticamības noteikšanai*).

### **Pētījuma rezultāti** **Research Results**

Pētījuma dalībnieku sirdsdarbības frekvences slodzes testa laikā bez un ar sejas masku tika iegūti sekojoši rezultāti. Testēšanas sākumā dalībnieku sirdsdarbības frekvence (SF, x/min) bez sejas maskas vidēji bija  $76 \pm 6.6$  sitieni minūtē (variācijas koeficients 8,7%) un ar sejas masku  $74 \pm 6,9$  sitieni minūtē (variācijas koeficients 9,3%). Sirdsdarbības frekvences statistiski ticama atšķirība pirms testēšanas bez un ar sejas masku netika konstatēta ( $p=0,14$ ). Veloergometrijas testa laikā vidējie sirdsdarbības frekvences rādītāji pakāpeniski palielinājās un tikai slodzes sestajā minūtē, sasniedzot submaksimālo līmeni, tika konstatēta statistiski nozīmīga rezultātu atšķirība testā ar sejas masku (1.tabula)

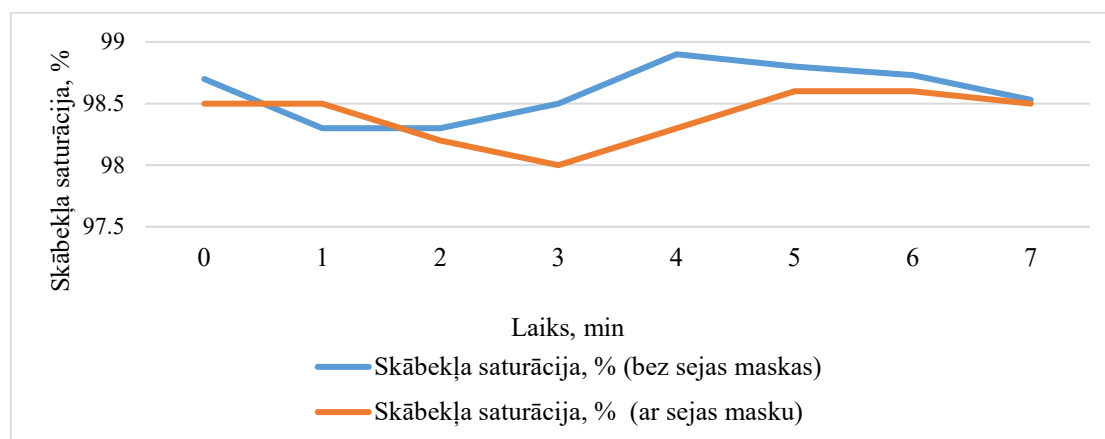
Testēšanas nobeigumā jeb 7.testa minūtē subjektiem bez sejas maskas sirdsdarbības frekvence bija  $141 \pm 12,8$  (variācijas koeficients 9%), savukārt subjektiem ar sejas masku  $147 \pm 9,5$  (variācijas koeficients 6,5%). Salīdzinot 7.minūtes rezultātus testēšanas SF, x/min bez un ar sejas masku ( $p=0,004$ ). Abu vidējo rezultātu izkliede bija vienāda 9%. Iegūtie dati liecina, ka rezultātu izkliede starp subjektu uzradītiem sirdsdarbības frekvences rādītājiem nepārsniedz 11%. Variācijas koeficienta procentuālās vērtības norāda, ka rezultātu izkliede ir normas robežās, savukārt testējamiem subjektiem, neskatoties uz salīdzinoši nelielu skaitu, bija vienmērīgs fiziskās sagatavotības līmenis.

1. tabula. **Sirdsdarbības frekvence slodzes testā bez un ar sejas masku**  
**Table 1 Heart rates in test without and with a face mask**

Slodzes laiks (minūtes)	Bez sejas maskas (B <sub>SM</sub> )/ Ar sejas masku (A <sub>SM</sub> )	SF, x/min	(SD±)	Variācijas koeficients (%)	p
1	B <sub>SM</sub>	136	15,9	11	0,19
	A <sub>SM</sub>	134	12,5	9,3	
2	B <sub>SM</sub>	142	11,5	8,1	0,88
	A <sub>SM</sub>	143	11,6	8,2	
3	B <sub>SM</sub>	147	10,1	6,9	0,7
	A <sub>SM</sub>	147	11,9	8,4	
4	B <sub>SM</sub>	150	11,3	7,5	0,1
	A <sub>SM</sub>	152	10,3	7,7	
5	B <sub>SM</sub>	153	10,6	6,9	0,39
	A <sub>SM</sub>	155	10,3	7,7	
6	B <sub>SM</sub>	155	11,2	7,2	0,005*
	A <sub>SM</sub>	159	8,6	5,4	

\* p<0,05

Analizējot subjektu skābekļa saturācijas parametrus katrā testēšanas minūtē, var secināt, ka nepastāv būtiska atšķirība starp šiem rādītājiem abās testēšanas reizēs (1. attēls).



1. attēls. **Skābekļa saturācija slodzes testā bez un ar sejas masku**  
**Figure 1 Oxygen saturation in exercise test without and with face mask**

Pētījuma dalībniekiem testā bez sejas maskas skābekļa saturācijas rādītājs pirms slodzes bija  $98,7 \pm 0,96\%$ , (variācijas koeficients 1%), savukārt subjektiem ar sejas masku  $98,5 \pm 0,99\%$  (variācijas koeficients 1%). Salīdzinot rādītājus ar sejas masku un bez sejas maskas statistiski ticamas atšķirības netika konstatētas ( $p=0,34$ ). Testēšanas pirmajā minūtē subjektiem bez sejas maskas SpO<sub>2</sub>, uzrādījās



98,3 ± 1,16% (variācijas koeficients 1,2%), savukārt ar sejas masku 98,2 ± 1,14% (variācijas koeficients 1,2%). Salīdzinot rezultātus ar sejas masku un bez sejas maskas (p=1). Testēšanas otrajā minūtē subjekti bez sejas maskas SpO<sub>2</sub> uzrādīja 98,3 ± 0,7% (variācijas koeficients 0,7%), bet ar sejas masku uzrādīja 98 ± 0,53% (variācijas koeficients - 0,5). Salīdzinot rādītājus ar un bez sejas maskas (p=0.18). Testēšanas 3.minūte vidējais rādītājs SpO<sub>2</sub> subjektiem bez sejas maskas bija 98,5 ± 0,91% (variācijas koeficients 0,9%), savukārt ar sejas masku 98,3 ± 0,61% (variācijas koeficients 0,6%). Salīdzinot rādītājus ar un bez sejas maskas (p=0.79). Testēšanas 4.minūtē vidējais SpO<sub>2</sub> rādītājs subjektiem bez sejas maksas bija 98,9 ± 1,06% (variācijas koeficients 1,1%), savukārt ar sejas masku saturācija bija 98,6 ± 0,91% (variācijas koeficients 0,9%). Salīdzinot rādītājus ar un bez sejas maskas (p=0,38). 5.minūtes subjektu bez sejas maskas SpO<sub>2</sub> rādītājs bija 98,8 ± 0,68% (variācijas koeficients 0,7%), savukārt ar sejas masku 98,6 ± 0,73% (variācijas koeficients 0,7%). Salīdzinot rādītājus ar un bez sejas maskas (p=0.57). 6.minūtē subjektu bez sejas maskas SpO<sub>2</sub> uzrādīja 98,73 ± 0,7% (variācijas koeficients 0,7%), savukārt ar sejas masku 98,5 ± 0,74% (variācijas koeficients 0,8%). Salīdzinot rādītājus ar un bez sejas maskas (p=0.49). Pēc slodzes testa beigām 7.minūtē subjektiem bez sejas maskas SpO<sub>2</sub> uzrādījās 98,53 ± 0,99% (variācijas koeficients 1,0%), savukārt ar sejas masku 98,2 ± 1,01% (variācijas koeficients 1%). Salīdzinot rādītājus ar un bez sejas maskas (p=0,4).

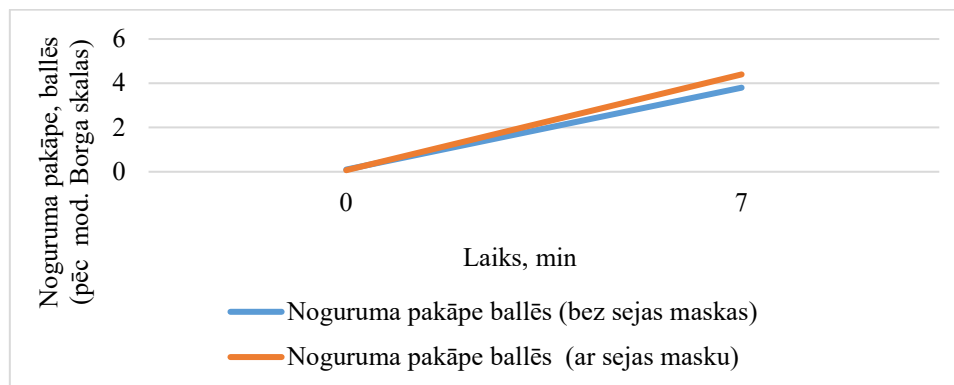
Skābekļa saturācijas parametrisko datu variācijas koeficienta noteikšanas rezultātā ir noteikts, ka datu izkliede nepārsniedz 1,2%. Analizējot subjektu skābekļa saturācijas parametrus katrā testēšanas minūtē, var secināt, ka nepastāv būtiska atšķirība starp šiem rādītājiem abās testēšanas reizēs, par ko liecina iegūtas p-vērtības.

Rādītāji, kas tika iegūti, izmantojot modificētu Borga skalu, un ir paredzēti subjektīvās noguruma pakāpes noteikšanai, tika vērtēti pirms un pēc testēšanas. Šim parametram vidējā vērtība pirms slodzes testa uzsākšanas subjektiem bez sejas maskas bija 0,13 ± 0,35 balles. Pēc slodzes noguruma pakāpes rādītājs palielinājās līdz 3,8 ± 1,08 ballēm, pēc testēšanas iegūto rezultātu izkliede ir 28%.

Savukārt, subjektiem ar sejas masku pirms testa uzsākšanas bija 3,8 ± 1,08 balles un pēc slodzes testa 4,4 ± 0,9 balles, pēc testēšanas iegūto rezultātu izkliede ir 21%.

Salīdzinot rezultātus ar un bez sejas maskas, tika konstatēta statistiski būtiska atšķirība (p=0.008), kas liecina par sejas maskas ietekmi uz subjektīvo noguruma pakāpes palielināšanos, veicot slodzes testu ar sejas masku (2. attēls).

Analizējot maksimālā skābekļa patēriņa rādītājus, tika konstatēts, ka testā, kad subjektiem tika piedāvāts veikt slodzi bez maskas, tas bija vidēji 2,73 ± 0,62 L/min liels, savukārt, kad tests bija jāveic ar masku, šis parametrs bija 2,49 ± 0,49 L/min liels. Veicot parametru salīdzināšanu ar pielāgotu T-testu (pēc iepriekšējas analīzes ar Šapiro-Vilka testu) ir konstatēts, ka p-vērtība ir vienāda ar 0,008, kas liecina par to, kad starp rādītājiem nepastāv būtiskās atšķirības.



2. attēls. *Noguruma pakāpes izmaiņas bez un ar sejas masku*  
Figure 2 *Difference of fatigue level without and with a face mask*

### **Diskusija un secinājumi** **Discussion and Conclusions**

Šī pētījuma rezultāti norāda, ka ķirurģisko sejas maskas slodzes laikā, būtiski neietekmē kardiorespiratorās sistēmas rādītājus, lai gan, veicot slodzi ar masku submaksimālā intensitātē sirdsdarbības frekvence būtiski palielinājās. Šie rezultāti ir pretrunā ar pieņēmumu, ka ķirurģiskas sejas maskas nēsāšana var negatīvi ietekmēt fizioloģiskos parametrus. Šīs hipotēzes pamatā var būt citi pētījumi, kas norādīja, ka vingrošana ar sejas maskām var radīt ievērojamus veselības apdraudējumus un noslogot dažādas fizioloģiskas sistēmas, piemēram, plaušu, asinsrites un imūnsistēmu (Chandrasekaran & Fernandes, 2020). Pierādījumi no iepriekšējiem pētījumiem apstiprina šo fizioloģisko ietekmi. Piemēram, nesen veiktā pētījumā, kurā tika pētīta ķirurģiskas sejas maskas un N95 sejas maskas nēsāšanas ietekme uz kardiopulmonālās slodzes spēju 12 veseliem vīriešiem pakāpeniskas maksimālās slodzes testa laikā, tika konstatēts, ka ar abām maskām ir ievērojami samazinājusies viņu plaušu funkcija un ventilācija; viņi arī novēroja kardiopulmonālās slodzes samazināšanos (Fikenzer et al., 2020). Lassings et al. (2020) pārbaudīja ķirurģiskas sejas maskas ietekmi uz kardiopulmonālajiem parametriem slodzes laikā pie maksimālā laktāta līdzsvara stāvokļa 14 veseliem vīriešiem. Ķirurģisko sejas masku izmantošana vingrojumu laikā palielināja elpceļu pretestību un sirdsdarbības frekvenci. Līdzīgi citā pētījumā (Driver et al., 2022) tika novērots ievērojams  $VO_2$ max, minūšu ventilācijas un maksimālās sirdsdarbības rādītāju samazinājums pakāpeniskā skrejceļņa skriešanas testa laikā 31 pieaugušajiem ar auduma masku.

Lai gan nesen veiktajā zinātniskās literatūras meta analizē, kas iekļāva četrdesmit piecus pētījumus ar 1264 dalībniekiem, tika konstatēts, ka slodzes laikā masku izmantošana nedaudz ietekmē gan fizioloģiskos, gan psiholoģiskos parametrus, tostarp gāzu apmaiņu, plaušu funkciju un subjektīvu diskomfortu, tomēr kopumā ietekme uz vingrinājumu veikspēju nav būtiska (Zheng, Poon,

Wan, Dai & Wong 2023). Mūsu pētījuma rezultāti saskan ar šīm atziņām, jo tikai vienā no rādītājiem (SF) testēšanas pēdējā minūtē un minūti pēc testēšanas, bija vērojama būtiska atšķirība ( $p=0.005$  un  $p=0.004$ ) starp rādītājiem ar un bez sejas maskas. Iespējams būtiskāko ietekmi sejas masku izmantošana izraisa subjektīvajos rādītājos (diskomforts, mitruma sajūta u.c.), ko daļēji apliecina modificētās Borga skalas rezultāts ar statistiski nozīmīgu atšķirību starp rādītājiem ( $p=0,008$ ), tomēr šo parametru variācijas koeficienti abās testēšanas reizēs (28% un 21%) neļauj apgalvot par datu objektivitāti, jo rezultātu izkliede ir salīdzinoši liela.

### *Summary*

Different loading test protocols are used for testing patients and athletes, based on the category of the individual being tested and the goals of the test. Ergometric load tests are used to determine physical fitness or capacity, endurance indicators, and the impact of training effectiveness on the cardiorespiratory system in both clinical and preventive medicine system.

This study examines the effects of facial masks on the values of the cardiorespiratory system during and after the ergometry load test. 15 subjects ( $n=15$ ) with an average age of  $26.8\pm 4.4$  years participated in the study, the average height of the participants was  $173.6\pm 7.85$  cm, the average weight was  $71.3\pm 12.3$  kg., who also successfully completed both testing times, there were 5 men in the research group and 10 women. Subjects aged 18 to 40 who were selected after.

The results have shown that there are statistically plausible changes to the subjective fatigue rate after load ( $p = 0.008$ ), while changes in oxygen saturation parameters are not statistically probable at all test minutes ( $p > 0.18$ ), statistically significant differences in heart rate are seen at 6th minute ( $p = 0.005$ ) and at the end of the test ( $p = 0.004$ ).

The impact of facial masks on cardiorespiratory performance during the load test is minimal and its effects are observed at the end of the submaximal load testing: the heart rate values  $155 \pm 11.2$  x/min without a mask against  $159 \pm 8.6$  x/min with a mask in the 6th load minute and  $141 \pm 12.8$  x/min against  $147 \pm 9.5$  x/min per minute after the end of the load, while they have a negative effect on the subjective fatigue rate:  $3.8 \pm 1.08$  points without a mask against  $4.4 \pm 0.9$  points with a mask.

The results of this study indicate that wearing surgical face masks during exertion does not significantly affect cardiorespiratory system indicators, although, during exertion with the mask at submaximal intensity, heart rate significantly increased. These results contradict the assumption that wearing surgical face masks may negatively affect physiological parameters. This hypothesis may be supported by other studies suggesting that exercising with face masks can pose significant health risks and strain various physiological systems, such as the respiratory, circulatory, and immune systems (Chandrasekaran & Fernandes, 2020). Evidence from previous studies confirms this physiological impact. Using surgical face masks during exercise increased respiratory resistance and heart rate. Similarly, in another study (Driver et al., 2022), a significant decrease in  $VO_{2max}$ , minute ventilation, and maximal heart rate was observed during progressive treadmill running tests in 31 adults wearing cloth masks.

Although a recent meta-analysis of scientific literature, including forty-five studies with 1264 participants, found that mask use during exertion slightly affects both physiological and psychological parameters, including gas exchange, lung function, and subjective discomfort, the overall impact on exercise performance is not significant (Zheng, Poon, Wan, Dai & Wong 2023). Our study results align with these findings, as a significant difference was observed only

in one indicator (SF) in the last minute of testing and one minute after testing ( $p=0.005$  and  $p=0.004$ ) between the indicators with and without face masks. The most significant impact of wearing face masks may be reflected in subjective indicators (discomfort, sensation of moisture, etc.), partly supported by the results of the modified Borg scale with a statistically significant difference between the indicators ( $p=0.008$ ); however, the coefficients of variation for these parameters in both testing sessions (28% and 21%) do not allow for a definitive assertion of data objectivity, as the dispersion of results is relatively high.

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# TRANSGENDER'S RIGHTS TO SPORT COMPETITIONS FOLLOWING THE NEW RECOMMENDATIONS OF THE INTERNATIONAL OLYMPIC COMMITTEE (2021)

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**Abstract.** *The topic of human rights is taking on new relevant forms, especially when it comes to transgender rights. Their right to participate in sports has always been a subject of much debate. In November 2021 the International Olympic Committee adopted the new recommendations "Framework on Equity, Inclusion and Non-Discrimination on the Basis of Gender Identity and Intersex" on transgender people, which declared that each federation has to decide for itself when setting its own rules regarding the right of these people to participate in sports competitions. So, one thing is clear there is no common position on this issue. The article aims to reveal the practical aspects of such regulation regarding the possibilities and limitations of transgender participation in individual sports. The applied research methods are analysis of legal acts and other documents, review of articles and scientific literature, and qualitative comparative analysis. The research results showed that despite the principles specified in the Framework prohibiting discrimination, in practice these principles can be difficult to harmonize, especially if we speak about fair competition and equal opportunities.*

**Keywords:** *gender identity, human rights, International Olympic Committee, sports competition, transgender.*

## Introduction

Human rights guarantees and non-discrimination influence disagreements and debates about transgender<sup>1</sup> opportunities in sports. The development of transgender opportunities to participate in sports competitions was characterized by the fact that initially the determined gender of the athlete was checked using the nudity method, later - the Barr body test<sup>2</sup>, and finally the requirements for the level of testosterone in the blood were established. It should be noted that debates and controversies usually arise over the participation of transgender women (male to female) in the sport. In the opinion of the majority of scientists, testosterone is one of the factors that determine the fundamental differences in sports results between biological men and women. According to this indicator, women are

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<sup>1</sup> Transgender is a person which gender identity differs from the sex assigned to them at birth.

<sup>2</sup> Barr body is found in cells of organisms where sex is determined by the presence of Y or W chromosome. For example, Barr's body testing was used in 1968 in the Olympic Games to detect male athletes representing female athletes and thereby gaining a competitive advantage.

different from men, also because of different hemoglobin content, muscle mass, body structure, strength, etc. In addition, testosterone and its metabolites are included in the list of prohibited substances as definitely improving sports performance (eg, see World Anti-Doping Code, article 2, 2021 and Prohibited List, 2024). But what constitutes the boundaries of fair competition can become a tricky question in every sport. For example, weightlifter Anna Van Bellinghen from Belgium claimed that trans woman athlete Laurel Hubbard competing against females in the Olympics is unfair, saying it “feels like a bad joke.” (Spitznagel, 2021). Or another example, then former tennis champion Martina Navratilova said: “To put the argument at its most basic: a man can decide to be female, take hormones if required by whatever sporting organization is concerned, win everything in sight and perhaps earn a small fortune, and then reverse his decision and go back to making babies if he so desires. It’s insane and it’s cheating” (Humphrys, 2019).

In November of 2021, after discussions with athletes, consultations with international sports federations and human rights organizations, and legal and medical experts the International Olympic Committee (IOC) published recommendations entitled “IOC Framework on Equity, Inclusion and Non-Discrimination on the Basis of Gender Identity and Intersex”. Practically this document is left to sports federations and organizations themselves to decide and establish their own eligibility criteria for participation transgender in sports competitions. Hasn't this led to more chaos by self-imposing requirements and/or restrictions on transgender participation in different sports?

This article aims to reveal the practical aspects of such regulation regarding the possibilities and limitations of transgender participation in individual sports.

Noteworthy in this article, the author analyzes the practical aspects of the implementation of these recommendations of the International Olympic Committee regarding transgender's possibilities to participate in different sports. This article is a continuation of the analysis presented in the author's article “Transgender's Issues in Sports Competitions”<sup>3</sup>.

The applied research methods are analysis of legal acts and other documents, review of articles and scientific literature, and qualitative comparative analysis. Legal acts and documents are analyzed presenting IOC recommendations and requirements of sports federations and organizations for transgender athletes' participation in sports competitions. A review of articles and scientific literature was presented to show the actuality of the problem. The qualitative comparative analysis helped to make critical review of some regulations of international sports federations or organizations in transgender sports competitions comparing them with the principles, declared in the IOC Framework.

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<sup>3</sup> See SOCIETY. INTEGRATION. EDUCATION. Proceedings of the International Scientific Conference. Volume II, May 26th, 2023. 615-623. <http://journals.rta.lv/index.php/SIE/article/view/7135/6168>.

## **Review of Literature**

Starting from 2022, after the new IOC Recommendations, many different opinions regarding the transgender right to participate in sports competitions appeared in the media. Both positive and negative opinions regarding the application of the new recommendations were presented. For example, one of the articles could be mentioned with a positive opinion – “The Future of Women's Sport Includes Transgender Women and Girls” (Shultz et al., 2022) or the paper with a more negative review: “Media Framings of the Transgender Athlete as “Legitimate Controversy”: The Case of Laurel Hubbard at the Tokyo Olympics” where authors analyze the role of the media in framing transgender participation in sport as a ‘legitimate controversy’, and thus up for public debate during and after New Zealand weightlifter Laurel Hubbard’s debut at the 2020 Tokyo Olympics (Scovel et al., 2023).

Scientific articles on this topic could be sorted by the medical, sports experts or lawyers’ reviews. For example, the article “Sports Medicine Considerations When Caring for the Transgender Athlete” analyzed the transgender athlete’s health problems which they meet receiving exogenous estrogen therapy (Madeline et al., 2023). The article “Musculoskeletal health considerations for the transgender athlete” reviews the common gender-affirming medical and surgical treatments, unique musculoskeletal health considerations, and participation policies for transgender athletes (Birnbaum et.al., 2023). In the article “Disparities in sport participation of transgender women: a systematic and scoping review protocol” the authors describe a review protocol to understand disparities in sports participation of transgender women (Hamdan et al., 2023). The article “Joint position statement of the International Federation of Sports Medicine (FIMS) and European Federation of Sports Medicine Associations (EFSMA) on the IOC framework on fairness, inclusion and non-discrimination based on gender identity and sex variations” critically analyzes new Framework (2021) of the International Olympic Committee (IOC) where the authors “would like to see further discussion and consultation with all stakeholders leading to a balanced framework that protects the rights of all athletes and gives IFs the tools they need to ensure inclusion and fairness” (Pigozzi et al., 2022). More legal theoretical philosophical points of view were found in the article “Fair Competition and Inclusion in Sport: Avoiding the Marginalization of Intersex and Trans Women Athletes” where the author argues about problems finding a balance between fair competition, inclusion and non-discrimination (see, Cooper, 2023).

Also, many papers could be sorted by type of sport (Hardwicke et al. “Drafting behind LGB: Transgender athletes in the sport of cycling”, 2023), country (for example, in USA, see Larsen “Hurdles for Transgender Athletes: States Passing Bans on Transgender Athletes Primes a Fight over Title IX and the Fourteenth Amendment”, 2022) or transgender’s age (for example, Barrera et al.



“The Medical Implications of Banning Transgender Youth from Sport Participation”, 2021)

It should be mentioned the article “The status of transgender and intersex athletes in international sports federations” which based on an analysis of the overview of the directives in force within the various international sports federations in swimming, cycling, football, athletics, tennis, etc. (Bydzovsky, 2023).

In another article “Who counts as a woman? A critical discourse analysis of petitions against the participation of transgender athletes in women's sport” where the author analyzes the organizational anti-trans discourse on the presence of transgender athletes in women's sports including their petitions against transgender women in sport competitions: transgender women have natural (biological) advantages; women's sport should be protected; segregation in sport should be based on sex (not gender) etc. (Jakubowska, 2023).

### **IOC Recommendations (Framework on Fairness, Inclusion and Non-Discrimination on the Basis of Gender Identity and Sex Variations, 2021): critical analysis**

“IOC Framework on Fairness, Inclusion and Non-Discrimination on the Basis of Gender Identity and Sex Variations” was approved by the IOC Executive Board during its meeting on 12 November 2021 (Framework, 2021). The main fundament on which was built this Framework is human rights and non-discrimination. These Recommendations presuppose the protection of such social values as health, safety, dignity, fairness, a safe, harassment-free and welcoming environment, gender equality, and inclusion. Noteworthy, is that this document acknowledges the central role that eligibility criteria play in ensuring fairness, particularly in high-level organized sports in the women's category. That means it is very important to keep the right segregation in men's and women's sports.

This document includes and explains these principles: inclusion, prevention of harm, non-discrimination, fairness, no presumption of advantage, evidence-based approach, primacy of health and bodily autonomy, stakeholder-centered approach, right to privacy, and periodic reviews. Most of them are the common principles of law and, for example, such principles as “inclusion” and “non-discrimination” complement each other, or “primacy of health and bodily autonomy” with the right to privacy.

“Prevention of harm” means that “sports organizations should identify and prevent negative direct and indirect impacts on athletes' health and well-being that may come from the design, implementation, and or interpretation of eligibility criteria” (2.2, Framework, 2021). Such recommendation for sports organizations allows for a very broad interpretation of what is meant by negative direct and indirect impacts on athletes' health and well-being by establishing certain criteria.

But from the other point of view, always there is the possibility to apply to the Court of Arbitration of Sport, to an ombudsperson or to seek a mediation mechanism (6.2b, Framework, 2021). The Court of Arbitration of Sport in one of its overviews mentioned, that “The IOC framework was issued as part of the IOC’s commitment to respecting human rights (as expressed in Olympic Agenda 2020+5), and as part of the action taken to foster gender equality and inclusion. From March 2022 onwards, IFs are responsible for defining how this framework works in practice and applied to specific sports, disciplines and events. One of the key recommendations of the IOC framework is that diverse gender identities and variations in sex characteristics should not be assumed as an unquestionable sign of disproportionate advantage nor imply unavoidable risk to other athletes. Rather, any eligibility rules should be based on ethical, credible, and peer-reviewed research” (Sport and Human Rights, 2023). Noteworthy, the case of *Semenya v. Switzerland* (10934/21) in the European Court of Human Rights (ECHR) could be an example of defending sports athletes’ rights not only in the Court of Arbitration if sports organizations use negative direct and indirect impacts on athletes’ health and well-being by establishing certain criteria. In the case of *Semenya v. Switzerland* (this case is not dealing with transgender issues directly) the ECHR held that there had been a violation of the prohibition of discrimination taken together with the right to respect for private life as well as a violation of the right to an effective remedy. The case concerned an athlete Semenya, specializing in middle-distance races, who complained about certain regulations of the International Association of Athletics Federations requiring her to take hormone treatment to decrease her natural testosterone level in order to be able to take part in international competitions in the female category. After refusing treatment, she could not participate in international competitions.

The principle of “non-discrimination” in the Framework is practically described as the prohibition of discrimination on gender identity ensuring fairness. It allows to make criteria to determine disproportionate competitive advantage requiring testing of an athlete's performance and physical capacity. However, no athlete should be subject to targeted testing because of, or aimed at determining, their sex, gender identity and/or sex variations. Fairness must be maintained by prohibiting a disproportionate competitive advantage, preventing a risk to the physical safety of other athletes, and preventing athletes from claiming a gender identity different from the one consistently and presently used during the sports competition. The question arises of two competing rights: the right to fair competition and the right to non-discrimination. In practice, these principles can be difficult to harmonize - they can be contradictory to each other. The creation of some criteria in different sports federations to determine disproportionate competitive advantage requiring testing of an athlete's performance and physical capacity could be disproportional with the principle of “non-discrimination”. For example, World Athletes made a new document “Eligibility Regulations for

Transgender Athletes, 2023” where eligibility conditions for transgender female athletes consist of these regulations: “They must provide a written and signed declaration, in a form satisfactory to the Medical Manager, that their gender identity is female; they must not have experienced any part of male puberty either beyond Tanner Stage 2 or after age 12 (whichever comes first); since puberty, they must have continuously maintained the concentration of testosterone in their serum below 2.5 nmol/L...” (Eligibility Regulations for Transgender Athletes, 2023). Comparing these regulations with the past requirements (10 nmol/L in 2011; 5 nmol/L in 2018) seems discriminatory compared with the past regulations.

The principle of „no presumption of advantage“ in the Framework could be compared with the legal principle of „presumption of innocence“, which means that any defendant in a criminal trial is assumed to be innocent until they have been proven guilty. Also the principle of „no presumption of advantage“ is described as prohibition to preclude or exclude an athlete from competition on the exclusive ground on a verified, alleged or perceived unfair competitive advantage due to their sex variations, physical appearance and/or transgender status, until it proved contrarily (the principle of „evidence based-approach“). Any restrictions should be based on robust and peer-reviewed research. These criteria to recognize this restriction as justified are: a) „demonstrates a consistent, unfair, disproportionate competitive advantage in performance and/or unpreventable risk to the physical safety of other athletes; b) is largely based on data collected from a demographic group that is consistent in gender and athletic engagement with a group that the eligibility criteria aim to regulate; and c) demonstrates that such disproportionate competitive advantage and or preventable risk exists for the specific sport, discipline and event that the eligibility criteria aim to regulate“ (6.1, Framework, 2021). In the opinion of the author, exactly the last criterion is the most important, because it requires an evidence-based approach.

The principle of „primacy of health and bodily autonomy“ seeks to protect athletes from medically unnecessary procedures or treatment to meet eligibility criteria for gynecological examinations or similar invasive physical examinations, aimed at determining an athlete’s sex, sex variations or gender. It also includes the education of coaches, managers and other members of the entourage to prevent interpretations of their eligibility criteria that can lead to harm (7.3, Framework, 2021). The primacy of health and bodily autonomy is a principle, which could be explained as „the interests of the human should always take precedence over the interests of science and society“. Moreover, it is a principle of medical ethics that requires non-harm.

In general „right to privacy“ includes lifestyle, family status, living environment, relationships with other persons, individual's views, beliefs, habits, physical and mental condition, health, honor, dignity, physical and psychological integrity, aspects of a person's physical and social identity, personal identification,

name, sexual orientation, sex life, ethnic identity, the right to personal development and the right to establish and develop relationships with other people, the right to image, etc. Following the Framework the principle of „right to privacy“ aims to protect athlete’s personally identifiable information and medical information. The importance of informed consent for athletes to determine eligibility to compete in a male or female category is declared in this Framework also. It means that the athlete must have sufficient information and understanding before making decisions about his/her collection of data obtaining of determine eligibility to compete in the men's or women's category. „Sports organizations should avoid public disclosure of athletes' confidential health and other personal information in the absence of the athlete's consent. In addition, sports organizations should consult with the athletes concerned on the best ways to publicly communicate about their eligibility“ (9.4, Framework, 2021). Analyzing not only the last principle but also all together, it should be emphasized, that many different responsibilities and duties are transferred to the shoulders of sports federations and organizations. This is justified because different categories of sports require different criteria for strength, muscle mass, and other similar qualities. However, on the other hand, implementing these principles requires a lot of resources, research, and knowledge, and other competencies that are not always available in these organizations.

### **Transgender rights in different sports competitions: implementation of IOC Recommendations**

The international sports federations or organizations are responsible for the integrity of their sport on the international level (see International Sports Federations, IOC). In this part of the paper’s author analyzes some policies about transgender athletes of international sports federations and organizations (see IOC implementing these IOC Recommendations (Framework).

#### *Eligibility Regulations for Transgender Athletes (World Athletics, 2023)*

These regulations of the World Athletics were approved by the Council on 23 March 2023 and came into effect on 31 March 2023. As announced in these Regulations, the opportunity to participate transgender athletes in the sport must be based on these imperatives: equal opportunities to all athletes; to maintain separate classifications (competition categories) for male and female athletes (because of different levels of circulating testosterone); fair and meaningful competition; dignity and privacy of transgender athletes. It should be emphasized that already in the introduction of the document itself, there is a clear indication of the requirements for the level of testosterone which, as was mentioned before, is significantly lower than the previous requirements. By these Regulations, a transgender athlete who wishes to be eligible to compete in the classification consistent with their gender identity must follow many rules regarding the

cooperation promptly and in good faith with the Medical Manager and the Expert, (to the fullest extent permitted and not contrary to applicable laws) to the collection, processing, disclosure and use of information (including their sensitive personal information) as required to implement and apply these Regulations effectively and efficiently and so on. (2.1, Regulations, 2023). Strong rules are made also about disagreements rising from these Regulations: “All cases arising under these Transgender Regulations will be dealt with by the World Athletics Health and Science Department, rather than by the Member Federation of the Athlete concerned (or by any other body) unless the Medical Manager specifically asks for their assistance with respect to a particular case” (2.4, Regulations, 2023). There is the possibility of a member federation adopting its own regulations to determine the eligibility of transgender athletes to compete in competitions, but only taking place under its own jurisdiction that are not World Rankings Competitions. Otherwise, it will not be recognized the athlete's performance for World Records or World Rankings purposes. Following the eligibility conditions for transgender female athletes Regulations determine all these conditions: “they must provide a written and signed declaration, in a form satisfactory to the Medical Manager, that their gender identity is female; they must not have experienced any part of male puberty either beyond Tanner Stage 2 or after age 12 (whichever comes first); since puberty they must have continuously maintained the concentration of testosterone in their serum below 2.5 nmol/L; they must continue to maintain the concentration of testosterone in their serum below 2.5 nmol/L at all times (i.e., whether they are in competition or out of competition) for so long as they wish to retain eligibility to compete in the female classification at World Rankings Competitions and/or have recognized any World Record performance in the female classification at a competition that is not a World Rankings Competition” (3.2, Regulations, 2023). After transgender athletes could not participate in the other sex classification in World Rankings Competitions or have recognized any World Record performance. These Regulations could be recognized as very strict rules against transgender (see, Nair, 2023).

*Eligibility Regulations for Transgender Athletes (Chapter V, Part 13 – Medical Rules, UCI Cycling Regulations)*

Union Cycliste Internationale is the world governing body of cycling. This organization approved some changes in their Cycling Regulations which came into force on 17<sup>th</sup> July 2023. Exactly Chapter V, Part 13 regulates the participation of Transgender athletes in the sport of Cycling (Eligibility Regulations for Transgender Athletes, 2023). The imperatives regarding these Regulations practically are very similar to Eligibility Regulations for Transgender Athletes: equal opportunities for all athletes to participate in and excel at the sport, and to provide them with fair and meaningful competition conditions; separation

classifications (competition categories) for male and female athletes (because of different levels of circulating testosterone); respect the dignity, privacy and similar. These rules also determine the requirements for cooperation and information provision for transsexuals who wish to participate in sports competitions; the requirement of written consent and so on. (13.5.009, Regulations). All cases arising under these Regulations are dealt with by the UCI Medical Department. Regulations determine five requirements for transgender (male-to-female) to compete in the female category of competition at an international event: declaration about their gender identity (female); they must not have experienced any part of male puberty either beyond Tanner Stage 2 or after age 12 (whichever comes first); since puberty they must have continuously maintained the concentration of testosterone in their serum below 2.5 nmol/L; maintaining the concentration of testosterone in their serum below 2.5 nmol/L at all times (i.e. whether they are in competition or out of competition) for so long as they wish to retain eligibility to compete in the female category of competition at international events; all measurements of serum testosterone must be conducted by means of liquid chromatography coupled with mass spectrometry (13.5.015, Regulations). Transgender athlete to be eligible to compete at an International Event, in the category of competition that is consistent with their gender identity: 1. legal recognition of the athlete's gender identity; or 2. surgical anatomical changes. Also here are the terms of the restriction on the participation of the opposite sex in the competitions.

Summarizing this review, it can be recognized that the rules for transgender athletes' participation in sports competitions are sufficiently strict - based on low limited testosterone level, not having experienced any part of male puberty and other requirements. Therefore, these regulations could be criticized not only by human rights experts but also by litigations that could be reached in arbitration or other courts.

## **Conclusions**

Sport is an area where clear gender segregation is maintained, but the inclusion of transgender people in sports causes some confusion. Prevention of harm, non-discrimination, inclusion, fairness, no presumption of advantage, evidence-based approach, the primacy of health and bodily autonomy, stakeholder-centered approach, right to privacy, and periodic reviews are the main principles provided in IOC Recommendations "Framework on Fairness, Inclusion and Non-Discrimination on the Basis of Gender Identity and Sex Variations" and from the point of view of human rights it is recognized as a positive aspect. In practice, these principles can be difficult to harmonize, especially if we speak about fair competition and equal opportunities.

This Framework opened a very wide interpretation of transgender athletes' rights in sports competitions. But also left the establishment of concrete rules for different kinds of sports on the “shoulders” of the sports federations and organizations. The creation of some strict criteria in different sports federations to determine disproportionate competitive advantage requiring testing of an athlete's performance and physical capacity could be disproportional with the principle of “non-discrimination”. Such regulations could become a reason to dispute it in the arbitration or courts.

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# THE EFFECT OF ULTRASONIC DIFFUSER ON INDOOR AIR QUALITY

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**Abstract.** *The usage of ultrasonic diffusers in indoors has raised concerns regarding their potential health effects, mostly due to the lack of research on the matter. This study's aim was to analyse the effect of distilled water, tap water, and tap water with essential oils droplets from an ultrasonic diffuser on the number of particle matter and microbiological contamination in indoor air under laboratory conditions during summer and winter seasons. The most common species throughout all experiments were the Gram+ *Aerococcus viridans* and *Micrococcus luteus*, accounting for 21.33% (93 CFU/m<sup>3</sup>) and 13.76% (60 CFU/m<sup>3</sup>) of the total bacteria count. Four different fungal species were identified over both seasons, moulds were more common making up 81.25% (65 CFU/m<sup>3</sup>). It was noted that the microorganisms identified were not pathogenic, presenting no significant infection risk from the diffuser's use. Experiments involving the use of an ultrasonic diffuser with DW demonstrated that PM1, PM2.5, and PM10 levels can be maintained within acceptable ranges over a 4-hour period. However, these experiments also highlighted an increase in nanoparticle concentrations, for which current guidelines lack specific recommendations. The diffuser was cleaned before every experimental setup stage, avoiding any residual contamination.*

**Keywords:** *indoor air pollution, indoor air quality, microbial contamination, PM, ultrasonic diffuser.*

## Introduction

The widespread deployment of ultrasonic diffusers in residential settings for air humidification and aroma dissemination has raised concerns regarding their potential health effects, particularly due to the lack of comprehensive research on the matter.

Using ultrasonic vibrations, these devices atomize water mixed with additives, such as essential oils, creating a fine mist that is subsequently dispersed into the surrounding air. In this study the use of various water types in an ultrasonic diffuser (distilled water (DW), tap water (TW), and water with

added lavender essential oil (WALO)) was evaluated to investigate the influence of water composition on the generation of particulate matter (PM) by these devices. This is crucial to estimate the potential health effects posed by inhaling the resultant aerosols. Consequently, our investigation explores the assessment of microbiological alterations in air composition under laboratory conditions. This study's aim was to analyse the effect of distilled water, tap water, and tap water with essential oils droplets from an ultrasonic diffuser on the number of particle matter and microbiological contamination in indoor air under laboratory conditions during summer and winter seasons.

### **Literature review**

Studies in epidemiology show a link between exposure to PM pollution and negative effects on respiratory and cardiovascular health. This includes reduced lung capacity, asthma, heart attacks, and an increase in deaths from all causes (Chen & Zhao, 2011). Indoor and outdoor pollutants differ significantly. Moreover, the origins of many air pollutants specific to indoor settings are still not well understood (Lau, Loebel Roson, Klimchuk, Gautam, Zhao, & Zhao, 2021).

Ultrasonic diffusers, widely utilized to enhance moisture levels in indoor environments, release different size particles  $<0,2-4 \mu\text{m}$  which quickly turn into vapor in indoor environments. It is believed (Yao, Dal Porto, Gallagher, & Dietrich, 2020) that approximately 90% of the emitted particles were in the inhalable  $0.25-0.5 \mu\text{m}$  and  $<0.25 \mu\text{m}$  size. These particles are composed of inorganic chemicals, metals, organic compounds, fibres, and microorganisms that originate from the water used to fill the devices. The concentration of these dissolved components in the aerosolized output is directly proportional to their concentrations in the source water (Dietrich, Yao, & Gallagher, 2022).

It was discovered (Tyndall, Lehman, Bowman, Milton, & Barbaree, 1995) that reservoirs in all kinds of humidifiers were colonized by both clinically insignificant and overtly or potentially pathogenic microorganisms. However, it was primarily the cool mist and ultrasonic diffusers that efficiently aerosolized bacteria and endotoxins. Similar studies have also highlighted that ultrasonic diffusers can release significant quantities of respirable endotoxins quickly. Researchers (Lee, Ahn, & Yu, 2012) deployed an ultrasonic diffuser for 10 hours a day across a 15-day span within a residential setting. Initial observations showed no significant changes in bacterial concentrations, as assessed by tryptic soy agar (TSA) for the first three days. However, a substantial rise in bacterial levels began on the sixth day, with counts reaching  $6979 \text{ CFU}/\text{m}^3$  and peaking at  $46431 \text{ CFU}/\text{m}^3$  on the ninth day. Fungal proliferation saw a marked increase starting on the twelfth day, with concentrations ranging between  $14424$  and  $16038 \text{ CFU}/\text{m}^3$ . Interestingly, the presence of fungal growth initially led to a

reduction in airborne bacterial concentrations, but once the fungal growth was eliminated, bacterial levels surged. This pattern suggests a competitive interaction for nutrients and space between the bacteria and fungi, influenced by the conditions created by the humidifier's use. Microbial proliferation within diffuser reservoirs may occur in the absence of routine decontamination between usage cycles.

It was observed (Yang, Chen, Yang, Gu, Cao, & Zhong, 2022) that microbial growth rates in diffuser reservoirs were highest in cold boiled water, followed by distilled water, whereas tap water exhibited the lowest rate of microbial proliferation. The authors discuss that the diminished microbial growth observed in tap water can be attributed to the substantial presence of free chlorine residuals, a byproduct of the water treatment processes, which serve to inhibit microbial proliferation. Conversely, cold boiled water is characterized by a high concentration of Chemical Oxygen Demand (COD) and Total Nitrogen (TN), compounds that likely provide essential nutrients for microbial growth. This differentiation in microbial growth dynamics across water types underscores the impact of water treatment residuals and nutrient availability on microbial ecosystems within humidifier reservoirs.

## **Methodology**

This study was carried out in a space designed for the assessment of different pollutants in a laboratory setting. The volume of the experimental room was approximately 24.96 m<sup>3</sup>. The ultrasonic diffuser was placed at a height of 1.15 m, all other measurement instruments were located on the same table near the ultrasonic diffuser. ELPI was in a room adjacent to the experimental room, through a designated hole in the wall specifically for this purpose. Ventilation of the room occurred before each experimental phase. Access to the room for the purpose of collecting experimental data was limited to only one person at a time and was done only when necessary. The diffuser used in this study was the Ultrasonic USB Colourful humidifier (model DQ-106) with a 0.3-liter capacity, it was sourced from a manufacturer in China, and can emit a mist volume of 30-45 mL/h. This device was operational for 4-hour intervals per session during both summer and winter seasons. Experimental trials were conducted over two consecutive days in three distinct phases, with control measurements recorded before to each phase. The study utilized three variations of water: distilled water, tap water directly from the laboratory's faucet, and tap water with added lavender essential oil (5 drops).

ELPI was used for the assessment of PM characteristics (0.006-1 µm), including number concentration, size distribution, and mass concentration. Additionally, PCE-RCM 16 was used for the evaluation of PM concentrations (PM1, PM2.5, PM10).

Microbiological sampling was conducted using a SAS Super ISO 100 air sampler. Bacterial cultures were cultivated on Trypticase Soy Agar (TSA) and incubated for 24 hours at 37°C, and fungi were cultivated on Sabouraud Dextrose Agar (SDA) and incubated for 48 hours at 22°C. The grown colonies were counted manually in terms of Colony Forming Units per cubic meter (CFU/m<sup>3</sup>) and afterwards identified. Fungi were identified with native smears and safranin staining, whereas bacterial identification utilized Vitek2.

The ultrasonic diffuser was cleaned before every experimental setup stage to avoid any residual contamination.

## Research results

### Microbiology

Cumulatively over both seasons, a total of 22 bacteria species were identified, with one species remaining unidentified. Without the microbiological background there were 19 bacteria species. Out of these 19 species 68,42% (13) were Gram-positive (Gram+) and 26,32% (5) were Gram-negative (Gram-) bacteria (Figure 1). The distribution of identified species is shown in Figure 2.

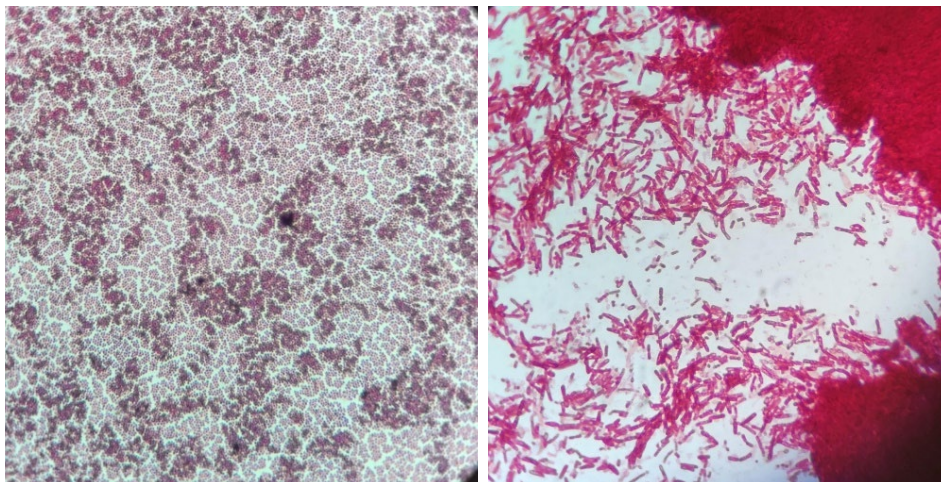
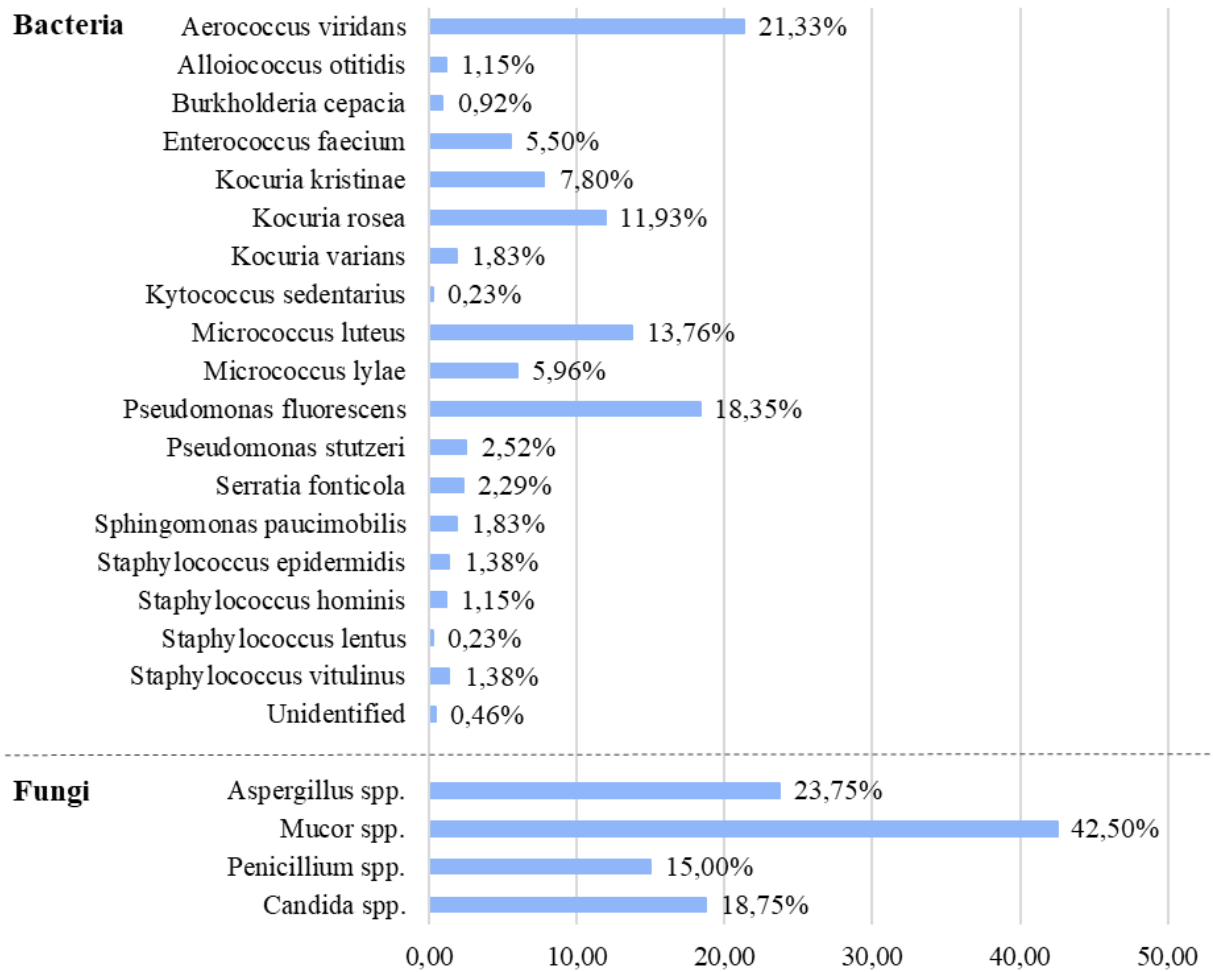


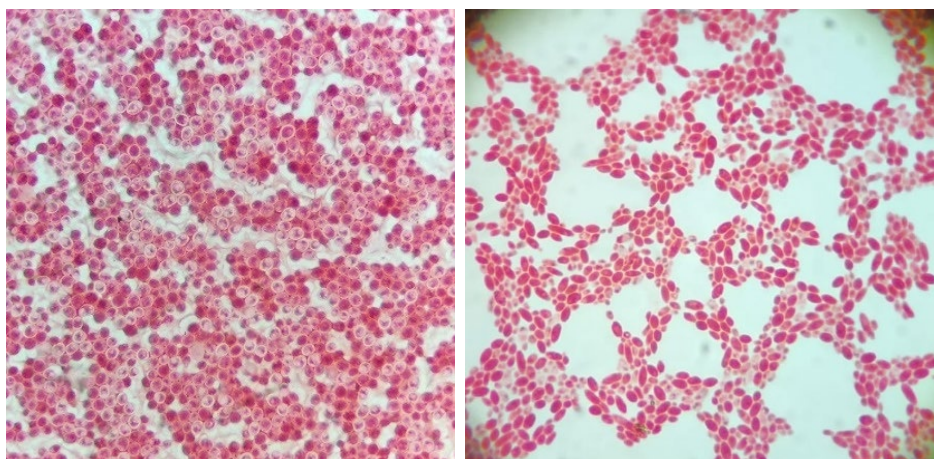
Figure 1 Gram-positive cocci and Gram-negative bacilli under microscope

The most common species throughout all experiments were the Gram+ *Aerococcus viridans* and *Micrococcus luteus*, accounting for 21,33% (93 CFU/m<sup>3</sup>) and 13,76% (60 CFU/m<sup>3</sup>) of the total, respectively, and Gram- *Pseudomonas fluorescens*, accounting for 18,35% (80 CFU/m<sup>3</sup>) of the total.

Regarding fungi, four different fungal species were identified over both seasons. Among these, moulds were more common, with *Mucor* spp. making up 42,50% (34 CFU/m<sup>3</sup>), *Aspergillus* spp. 23,75% (19 CFU/m<sup>3</sup>), and *Penicillium* spp. 15,00% (12 CFU/m<sup>3</sup>). Additionally, a single yeast species, *Candida* spp., was identified, accounting for 18,75% (15 CFU/m<sup>3</sup>) of fungi. See Figure 3 and Figure 4 for look under microscope.



*Figure 2 Identified species distribution by percentage*



*Figure 3 Candida spp. stained with safranin under microscope*

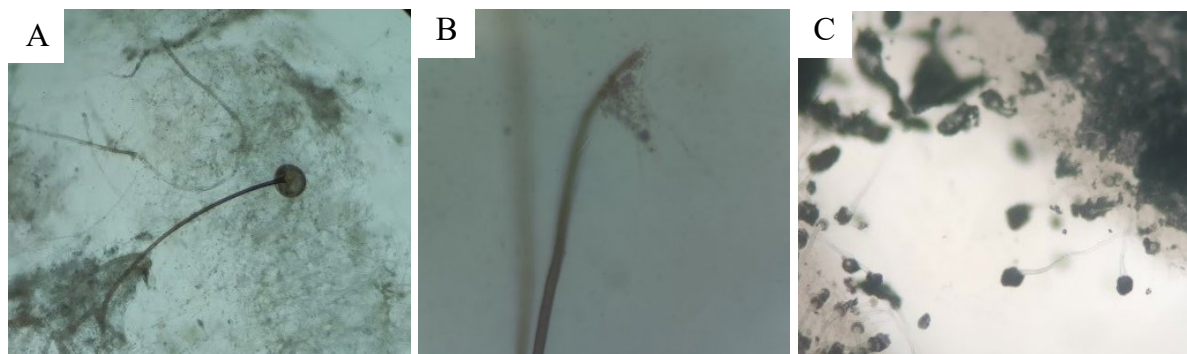


Figure 4 Native smears under microscope  
 A. *Mucor* spp. B. *Penicillium* spp. C. *Aspergillus* spp.

It was noted that the microorganisms identified were not pathogenic, presenting no significant infection risk from the diffuser's use. The data indicated a general decrease in bacterial CFU/m<sup>3</sup> following diffuser use, with longer operation correlating with fewer bacteria, though not linearly. Seasonal variations were observed; summer setup showed a 100% increase in CFU/m<sup>3</sup>, which did not align with winter results, suggesting potential data reliability issues. Fungi counts did not exhibit clear patterns, although it seems that the use of the ultrasonic diffuser decreases the CFU counts of fungi. All patterns can be seen in Figure 5. The overall data was insufficient to establish definitive correlations between diffuser operation duration and CFU/m<sup>3</sup> changes in fungi. Additional research is necessary for conclusive findings.

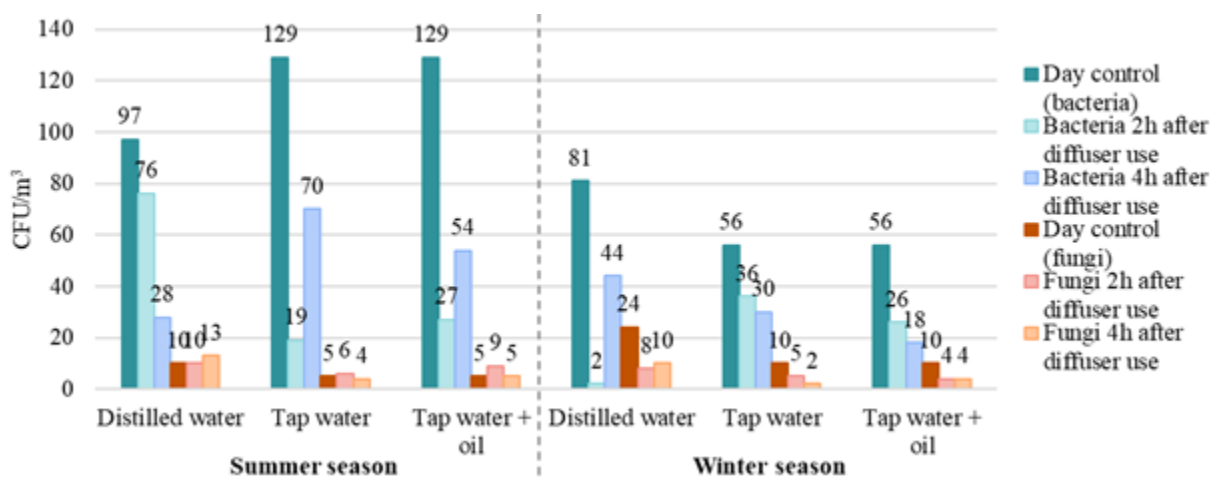


Figure 5 Microbial contamination during ultrasonic diffuser use

### Particles

In Figure 6, we can see the number concentration of particles by size. DW exhibits a very high number of small particles, particularly around 0.006 μm after 4 h work of ultrasonic diffuser, whereas TW presents a larger distribution across various particle sizes. For PM smaller than 1 μm, DW shows a lower total

number concentration, amounting to  $42 \cdot 10^3$  particles/cm<sup>3</sup>. In contrast, TW has the highest concentration with  $64 \cdot 10^3$  particles/cm<sup>3</sup>, and WALO has a concentration of  $51 \cdot 10^3$  particles/cm<sup>3</sup>.

PRE-RCM 16 results revealed that the highest PM levels were observed after 4 h of ultrasonic diffuser use with TWOL PM10, PM2.5, and PM1 being at 562 µg/m<sup>3</sup>, 452 µg/m<sup>3</sup>, and 253 µg/m<sup>3</sup>, respectively. The PM number began to increase after just 2 h of ultrasonic diffuser use. However, the TW PM1, PM2,5 and PM10 levels were lower, as can be seen in Figure 7, they still exceeded the recommendations of The European Agency for Safety and Health at Work (EU-OSHA) (Von Hahn, 2022) into 2 h of ultrasonic diffuser work.

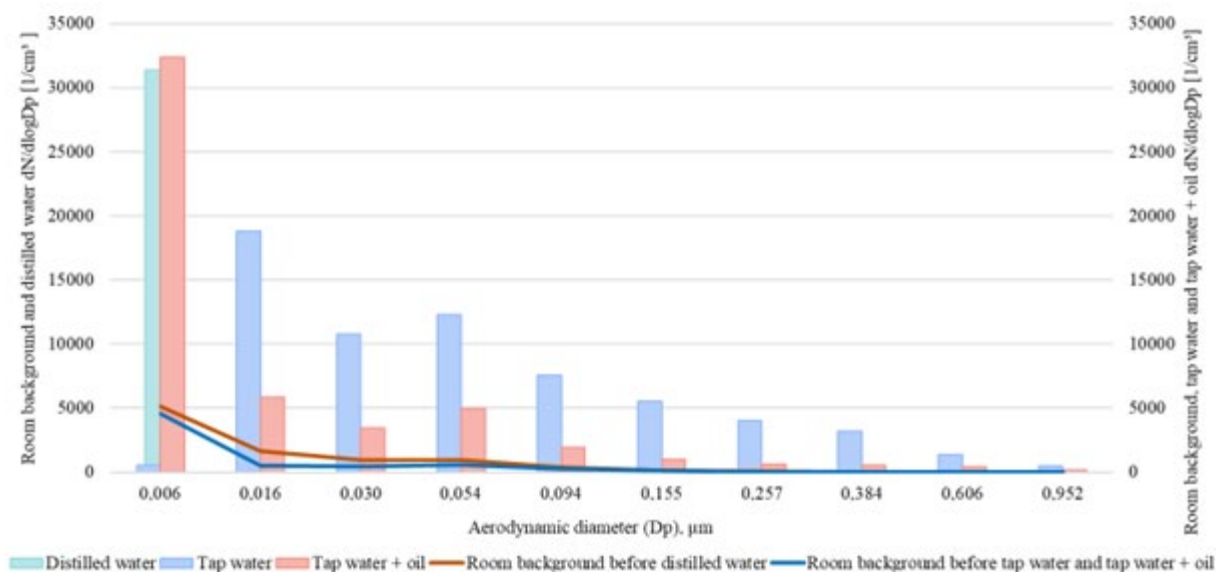


Figure 6 Particle size distribution (ELPI+) after ultrasonic diffuser use (summer season)

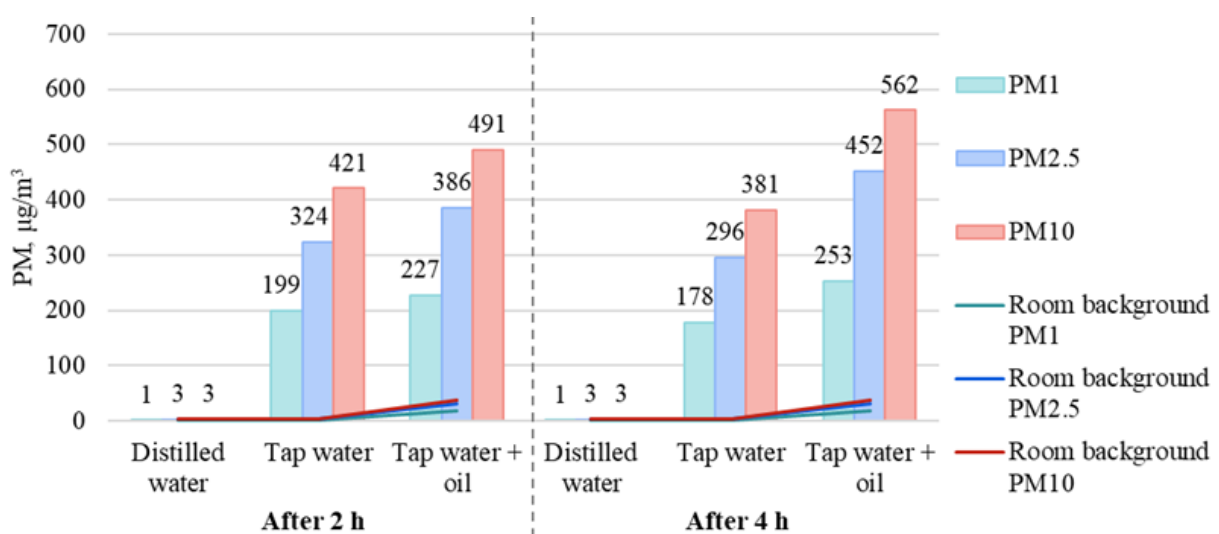


Figure 7 Particle size distribution (PCE-RCM 16) after ultrasonic diffuser use (summer season)

## Humidity

How it can be seen Figure 8, the most significant rise in relative humidity was recorded during summer season using WALO, achieving 53% relative humidity after 4 h. In contrast, the winter season reached its peak with TW. Overall relative humidity levels during the winter were consistently lower than during the summer season. It's important to note that manufacturers also mention that using DW can reduce the humidifying effect of ultrasonic diffusers. The data shows that, compared to control measurements, the use of DW over a 4-hour period had minimal impact on relative humidity levels. However, considering other studies reporting increases in PM levels, a lower increase in humidification should not be a deterrent to using ultrasonic diffusers.

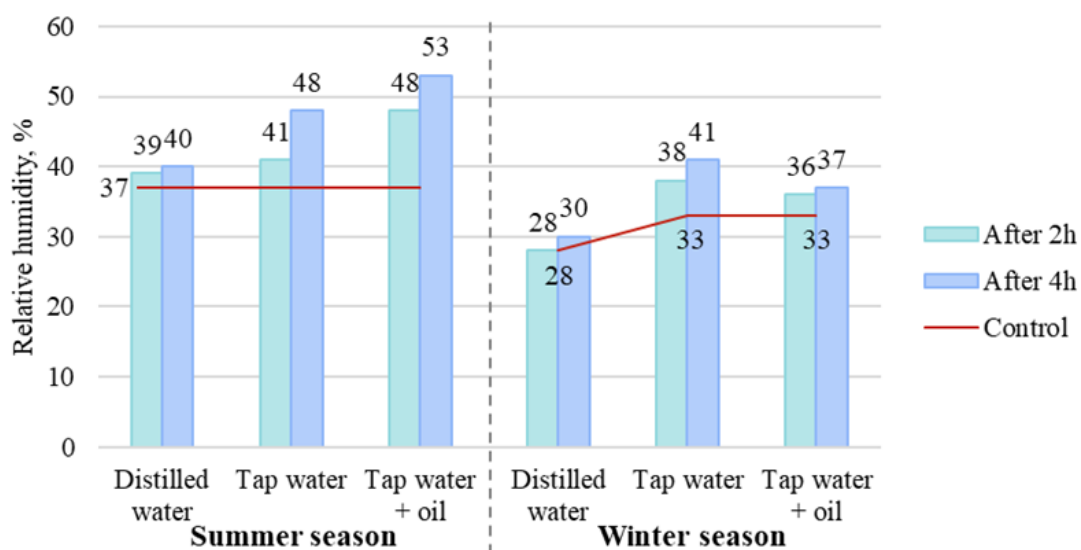


Figure 8 Relative humidity during ultrasonic diffuser use

### Temperature

Figure 9 represents changes of indoor temperature during the experiment. During both seasons the room temperature was higher after 2 and 4 hours of ultrasonic diffuser use with all types of water in comparison to the control (before ultrasonic diffuser use). In the summer season while using DW the temperature continued to increase after 2h, while with TW and WALO it started to slightly decrease. During winter while using DW and TW the temperature decreased, but with WALO it continued to increase. For a more detailed analysis of ultrasonic diffuser effect on room temperature more measurements are necessary.



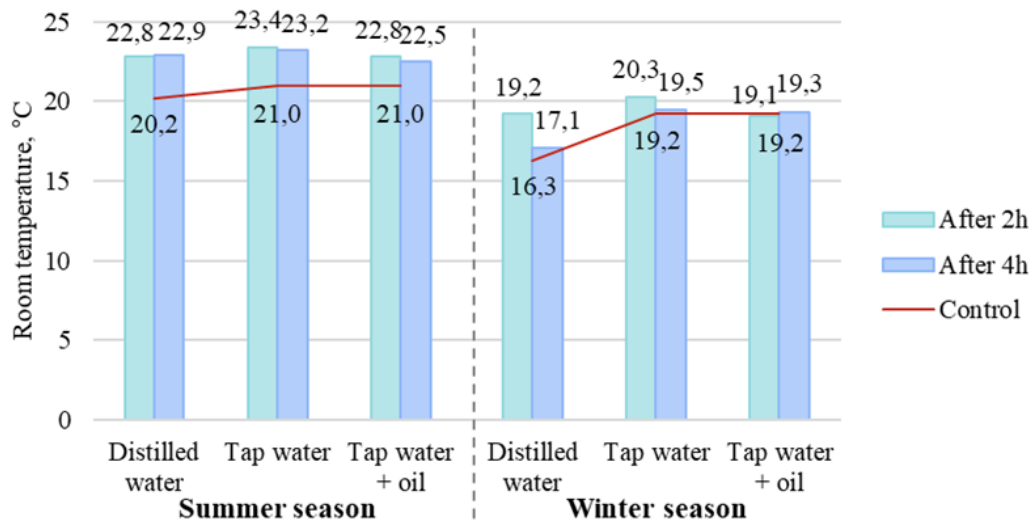


Figure 9 Temperature during ultrasonic diffuser use

## Conclusion

EU-OSHA (Von Hahn, 2022) have indoor air quality guideline values, which are set at less than  $50 \mu\text{g}/\text{m}^3$  for PM10 and  $25 \mu\text{g}/\text{m}^3$  for PM2.5 over a 24-hour average. Experiments involving the use of an ultrasonic diffuser with DW demonstrated that PM1, PM2.5, and PM10 levels can be maintained within acceptable ranges over a 4-hour period. However, these experiments also highlighted an increase in nanoparticle concentrations, for which current guidelines lack specific recommendations. Recently there have been concerns regarding particles smaller than 100 nm ( $0.1 \mu\text{m}$ ). Using other type of water in the ultrasonic diffuser has shown to exceed the recommended particulate matter levels even after 4 hours.

In this study there was not an increase in microorganisms above the norms set by EU-OSHA (Von Hahn, 2022)  $<500 \text{CFU}/\text{m}^3$ . However, other studies have shown that when an ultrasonic diffuser was used for more than 3 days, these standards were exceeded with the use of distilled water, boiled cooled water, and tap water. Given the current lack of specific recommendations for nanoparticle standards, we believe it's important to discuss the need for regular cleaning of the device and the use of distilled or deionized water.

## Acknowledgements

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## THE INFLUENCE OF BODY POSITION ON THE SPEED OF A SIDE KICK IN KICKBOXING

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**Abstract.** Kickboxing is a combat sport where two types of fights occur: light-contact and full-contact. There is no limitation on the strength of kicks and punches in the latter type. In martial arts, athletes try to hit an opponent with as much speed and power as possible. The position of the upper body is indicated as the most important factor directly influencing the performance of the kicks. The aim of the research: to determine the effect of a change in the position of the upper body of a 14-16-year-old kickboxer on the time of execution of the side kick with the foot placed in front and the ground reaction force in the place, moving forward and in the counterattack, determining the time of the side kick and the ground reaction force of the take-off foot in three different upper body positions to give the execution time of each type of side kick and the ground reaction force of the take-off foot. The fastest side kick with the forward foot in place and moving forward will be in the upper body position 45° to the vertical axis, but performing side kick with the forward foot in counterattack and side kick moving forward from the position of the upper body 90° against the vertical axis was partially proved.

**Keywords:** force platform, kickboxing, side kick, support reaction force, upper body position.

### Introduction

Kickboxing is a combat sport where two types of fights occur: light-contact and full-contact. There is no limitation on the strength of kicks and punches in the latter type (Ambroży et al, 2020). In martial arts, athletes try to hit an opponent with as much speed and power as possible (Gulledge & Dapena, 2008). The literature on martial arts states that the performance of a kick depends on a number of factors that affect the performance of the kick, such as distance, height of the target, type of technique, technical level of the athlete, gender, and weight category. The position of the upper body position is indicated as the most

important factor directly influencing the performance of the kicks (Boyat, Singh & Sandhu, 2017; Estevan, Falco & Jandacka, 2011).

The aim of the research: to determine the effect of a change in the position of the upper body of a 14–16-year-old kickboxer on the time of execution of the side kick with the foot placed in front and the ground reaction force in the place, moving forward and in the counterattack.

The time of the side kick performance was registered using “BTS SMART DX” infrared motion capture camera from the moment when the kicking foot begins to leave the floor until the foot reaches the target. All attempts were entered in the record.

The dynamometry method was arranged simultaneously with the cinematography method. As part of the experiment, the dynamometry method was implemented using BTS p-6000 force platforms. Using force platforms, data was collected on the force of the kicking foot, and, using the platform, it was also possible to determine if the position of the upper body influenced the kick. To obtain exact data on the force of the kick, the athlete should place the anchor leg on a platform, and it is important to ensure that the anchor foot is placed fully on one platform and also takes off the same platform. The place of landing after the take-off is not important.

### **Kicks in kickboxing**

Kicks in kickboxing are very specific. There are several types of kicks: shaking, stabbing, pushing, pressing and kicking in a jump. Likewise, it should be born in mind that during a combat it is important not only to perform strong and precise kicks, but also to return the foot to the initial position to avoid staying in an unstable position and to assume a comfortable position for defense or for preparing the next attack (Falco, Estevan & Vieten, 2011). Kicks can be made both with the right and the left foot, and almost all kicks can be made standing on the spot, approaching the adversary with a step, in a hop, or in a jump. Most kicks can be performed in several basic variations. First, every kick can be made both with the front and with the back foot. In some cases, it has such a significant impact on the kick performance technique that two completely different kicks seem to be performed, yet they have the same name. second, any hit can be made from the spot, after a step, or with a hop. Most kicks are also used in a jump, but this maneuver has a noticeable difference from performing a kick with a support and has multiple peculiarities in almost all its phases. Third, kicks differ depending on the level of use. Usually, all kicks can be made on the three main levels: high, medium, and low.

Kicks in combat sports have various performance variants and tasks depending on the combat situation, which differ in various characteristics. Mastering the kick technique takes place in multiple stages, and it is a careful

process where the development of technical and physical qualities takes place gradually, harmoniously complementing one another. A kick can be performed on the spot turning the body by 180° or by 360° and even by more than 360°, in a jump and in various combinations (Grassie, 2017). All kicks can be performed in three main directions: forward, backward, and sideways. There are only three basic kicks in these directions: forward straight (front kick), backward straight (back kick), and sideways straight (side kick). They are called basic kicks. Various other kicks, which are derived from the basic kicks are called derivatives (front hook, sideways hook, back hook). The exception is a downward kick with a straight leg from the upper position, which is a basic movement but does not form the basis for any derived kick.

A side kick is quite often used during combat; it is employed for long-range attacks. A side kick using the foot placed in front can be used for starting a combat, starting and finishing an attack, meeting and stopping the opponent, keeping the opponent at a certain distance, employing it in combinations and series of kicks. After punches, side kicks have the highest efficiency coefficient of all attacks in kickboxing (Ouergui, Hssin, Franchini, Gmada & Bouhlel, 2013). Many athletes use side kicks during combat more than any other kick because it carries a lower risk of injury than lead and hook kick techniques. Also, the kick's half-facing position offers less information on the planned attack to the opponent than the facing position. (Lee, Lee & Han, 2008).

A side kick is a power kick. The group of power kicks includes kicks where in the preparation stage an active strengthening of the upper leg is combined with a passive lower leg. A classical power kick has the lower leg fixed in the finishing stage. The kick formula from the preparation stage is as follows: active upper leg and passive lower leg. The involvement of the lower limb in the kick's motion mechanism takes place in three kinematic chains linking upper leg – lower leg – foot. When a kickboxer kicks using good technique, the effort is transferred from the hip to the upper leg and then to the lower leg and the foot, facilitating a continuous and gradual increase in power and speed in each link of the kinematic chain, from the first stage of the kick to the completion, providing power in the kick (Belykh & Oleynik, 2019).

Biomechanical studies on martial arts showed an interest in the way the force that impacts on the platform (support reaction force) influences the time of the kick performance. Studies show that, the higher the athlete's support reaction force, the shorter the time of performing the kick. It also seems that there is a positive correlation between the support reaction force and the speed of the kick segment. Support reaction force during a kick has a wide range, from 382 to 9015 N. The reason for this range is in different methods of data collection, variations in the types of sensors, athletes' peculiarities, kick or training methods, and the target's inertia or elasticity. The heavier and stronger the target, such as a heavy boxing bag or a fixed surface covered with polyester, the higher the kick's

support reaction force generated by the athlete. In all, kicks at the chest level (middle range) developed a higher kick support reaction force than kicks at the head level (upper range). Meanwhile, for high-level athletes, the height of the target does not influence the support reaction force. Overall, a higher body mass creates a higher kick support reaction force. Still, these correlations are more often found in lower-level athletes (Jandačka, Estevan, Janura & Falco, 2013). Likewise, the difference in the support reaction force of the kick depends on the athlete's weight. Statistically significant correlations between these parameters show the athlete's ability to increase the force of the kick due to a higher body mass (Pędzich, Mastalerz & Urbanik, 2006).

All the above factors lead to considering ways of performing kicks with maximum results, reaching the target quickly and precisely, and of joining and optimising the activities of the kinematic chain according to the condition of each part of the body, and for which movements and trajectories the force and speed power are to be developed.

## **Methodology**

A study group (sample) was developed for the study using the following criteria: age, gender, and training experience. 5 male athletes from the sport club Chin-Goo aged 14-16 with the experience of training in kickboxing for at least 5 years were selected.

The experiment participants were asked to take the combat position they found the most comfortable to achieve the greatest possible foot speed during the kick. This shows the need to study the ability to perform the kick depending on the position of the upper body. The experiment participants performed three side kicks in three positions of the upper body, at the angles of 0°, 45°, 90°, making in all nine kicks:

1. side kick with the foot positioned in front from the standing position;
2. side kick with the foot positioned in front moving forward;
3. side kick with the foot positioned in front in a counterattack.

The kick time was registered using a "BTS SMART DX" infrared motion capture camera from the moment when the kicking foot began to leave the floor to the moment it touched the target. All the kicks were included in the protocol.

The participants warmed up for 30 minutes before the experiment in the gym under the coach's supervision. After the warm-up, the test was done in the Latvian Academy of Sport Education (LASE) sport science research laboratory. All athletes one after the other performed three side kicks in three positions of the upper body at the angles of 0°, 45° and 90° to the vertical.

For SMART DX system to register the athlete's movements, the athletes had 10 reflecting straps attached. One reflector was attached to vertebra C7 and to the tailbone. Pairs of two reflectors were attached to the shoulders, to the upper leg

bones, knee joints, and sides of the ankles. The distance from the athlete to the target depends on the type of kick and the athlete. To make a straight kick forward from the standing position before the kick, each athlete measured the distance by straightening the kicking leg to the side kick position so that the foot would touch the target. The distance to the target for the side kick with the foot put forward and in motion and for the side kick with the front foot in the counterattack was measured as follows: the athlete would stand at a distance from the target with the front foot and then would make a small step backwards, putting the front foot next to the back foot and making a small backward step with the front foot.

The dynamometry method was applied to the experiment synchronously with the cinematography method. As part of the experiment, BTS p-6000 force platforms were used for dynamometry. Using force platforms, data about the take-off force of the leg were obtained, and it was also possible to determine whether the position of the upper body influenced the foot take-off. To obtain exact data on the force of the take-off foot. To obtain precise data on the force of the take-off foot, the athlete had to stand with the support foot on the platform, and it is important to ensure that the support foot would be placed fully on the platform only and would take off the same platform. After the take off, the place of landing is unimportant.

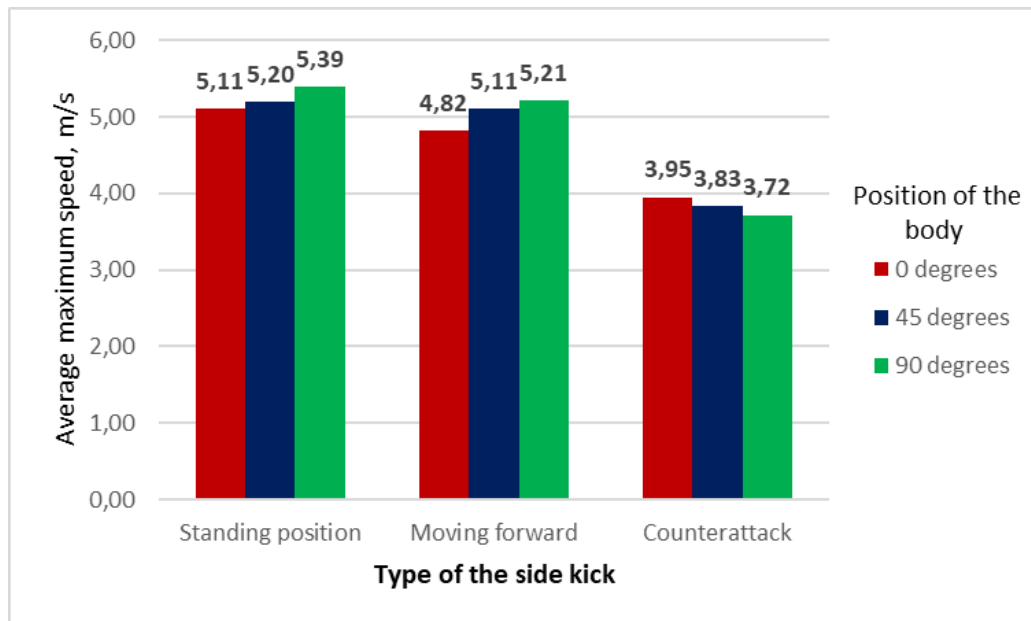
The data obtained at the laboratory were processed using mathematical-statistical methods to verify their statistical credibility. Subsequently, the data were compared and analysed to determine if there are correlations between the foot speed in performing a side kick and the upper body positions at 0°, 45°, and 90°.

### **Research results**

The Figure 1 shows the average maximum speed of the side kick from the standing position, moving forward and in counterattack in three positions of the upper body.

The average maximum speed of the participants' side kick with the front foot with the upper body position at 0° is  $5.11 \pm 0.03$  m/s, at 45° the result is  $5.20 \pm 0.04$  m/s, and at 90° the result is  $5.39 \pm 0.04$  m/s. In moving forward with the upper body position at 0° to the vertical the result is  $4.82 \pm 0.05$  m/s, at 45° it is  $5.21 \pm 0.05$  m/s, and at 90° it is  $5.21 \pm 0.05$  m/s. The participants in the experiment showed the average maximum speed of the side kick moving forward with the upper body at 0° of  $3.95 \pm 0.04$  m/s, at 45° of  $3.83 \pm 0.04$  s and at 90° of  $3.72 \pm 0.04$  m/s (Fig. 1).

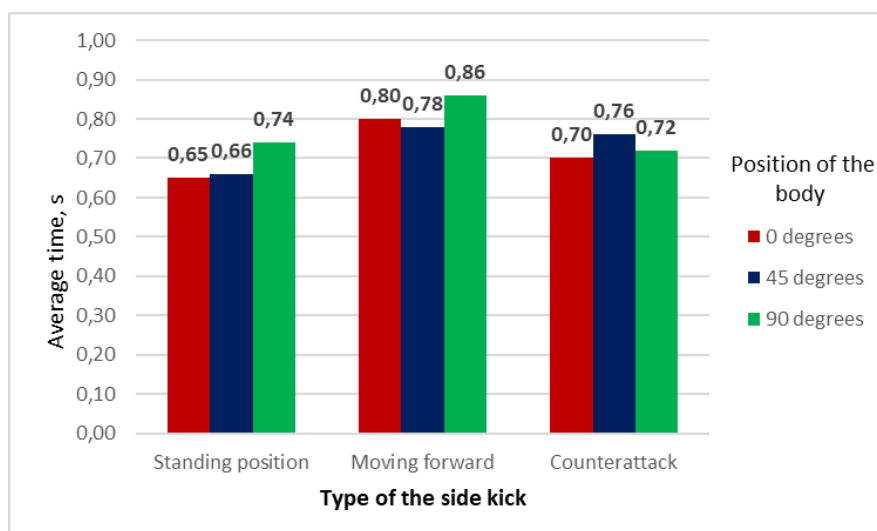
The highest speed of all types of the kicks was registered in standing position when the athlete stay on the place and execute side kick with concentration on the speed and power. A little less speed we can see in kick moving forward, but lowest average speed performing kick in counterattack.



*Figure 1 Average maximum speed of the side kick from the standing position, moving forward and in counterattack with the upper body in three angle positions, m/s*

Performing kick on the place and moving forward, the same tendency for the speed of the kick to change is observed. Although the speed differs little, the speed increases with a greater tilt of the body back. Therefore, if an athlete wants to perform a kick with greater speed, then he needs to tilt his body back more.

The participants' average performance time of the different types of side kicks with the front leg is shown in the Figure 2.



*Figure 2 Average time of the side kick from the standing position, moving forward and in counterattack with the upper body in three angle positions, s*



In the standing position with the upper body set at 0° against the vertical showed the result of  $0.65 \pm 0.02$  s, at 45° the result was  $0.66 \pm 0.04$  s, and at 90° it was  $0.74 \pm 0.02$  s. In movement when the upper body was set at the angle of 0° to the vertical was  $0.80 \pm 0.02$  s, at 45° it was  $0.78 \pm 0.01$  s and at 90° it was  $0.86 \pm 0.02$  s. The participants' average time of performing the side kick with the front leg in counterattack when the upper body was set at the angle of 0° to the vertical was  $0.70 \pm 0.01$  s, at 45° it was  $0.76 \pm 0.01$  s, and at 90° it was  $0.72 \pm 0.01$  s (Fig. 2).

The shortest time for performing the side kick is observed when kick on the place, since the athlete tries to make the kick as quickly as possible and nothing interferes with him. Comparing the performance time for a side kick with the upper body positions at 0° and 45° to the vertical, no statistically significant differences were found ( $\alpha < 0,05$ ). Performance time for a side kick from the standing position with the upper body set at 0° and 90°, statistically significant difference was found. Statistically significant difference in the average time of performing a side kick was found between the cases when the upper body was set at 45° and 90° to the vertical. When the upper body is at 45° to the vertical axis, the shortest time for the side kick is when moving forward, but it takes the longest average time when the upper body is set at 90° to the vertical. The shortest time the upper body positions at 0° for the side kick is when making a counterattack, but it takes the longest average time when the upper body is set at 45° to the vertical.

The participants' average support force for performing different types of the side kick with the front leg indicates the repulsion force of the supporting leg and thereby affects the speed and timing of the kick (Fig. 3).

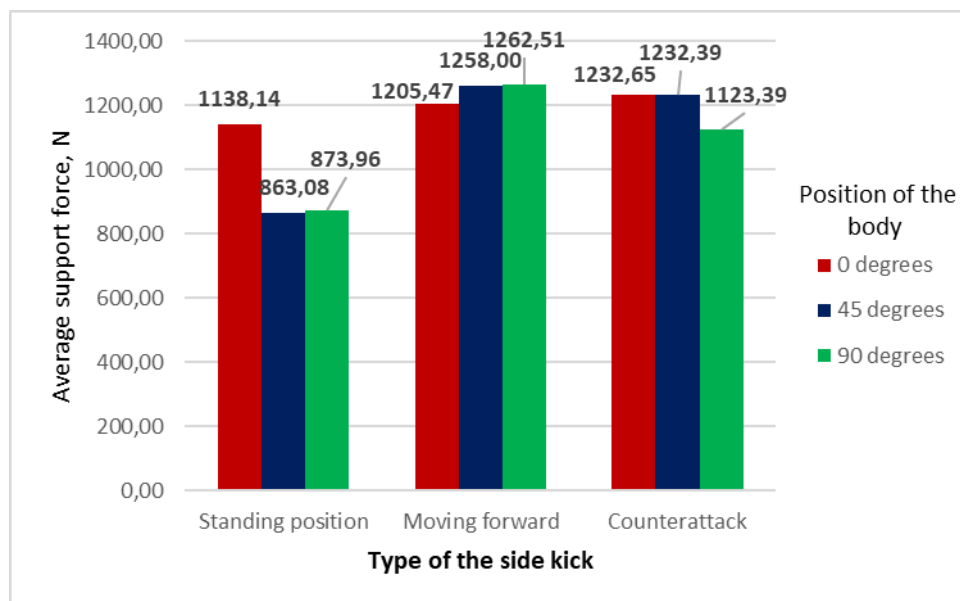


Figure 3 Average support force of the side kick from the standing position, moving forward and in counterattack with the upper body in three angle positions, N

The participants' average support force in the standing position when the upper body was set at the angle of 0° to the vertical was 1138.14 ± 14.98 N, at 45° it was 863.08 ± 17.30 N, and at 90° it was 873.96 ± 23.25 N. Performing the side kick with the front leg in a movement when the upper body was set at the angle of 0° to the vertical was 1205.14 ± 17.30 N, at 45° it was 1258.00 ± 23.74 N and at 90° it was 1262.51 ± 15.40 N. But in counterattack when the upper body was set at the angle of 0° to the vertical was 1232.65 ± 23.25 N, at 45° it was 1232.39 ± 17.90 N, and at 90° it was 1123.39 ± 22.39 N.

When the upper body is at 0° to the vertical axis, the greatest support force for the side kick is when performing it in the standing position, but the smallest value of support force was registered when the upper body is set at 45° and 90° to the vertical. Performing the side kick with the front leg in movement the greatest support force for the side kick are when the upper body is set at 45° and 90° to the vertical. The greatest support force for the side kick in counterattack are when the upper body is at 0° and 45° to the vertical axis, but the smallest value of support force was registered when the upper body is set at 90° to the vertical.

*Table 1 Experimental results for the side kick speed, performance speed and support reaction force*

Upper body position	Side kick from the standing position			Side kick while moving forward			Side kick in counterattack		
	0°	45°	90°	0°	45°	90°	0°	45°	90°
Kick speed, m/s	5,11	5,20	5,39	4,82	5,11	5,21	3,95	3,83	3,72
Performance time, s	0,65	0,66	0,74	0,80	0,78	0,86	0,70	0,76	0,72
Support reaction force, N	1138,14	863,08	873,97	1205,47	1258,00	1262,51	1232,65	1232,39	1123,39

The study results are summarised in Table 1. According to the results of the study, it is recommended to hold the upper body at 0° when performing the side kick in counterattack, because the foot reaches the highest speed in this position (3,95 ± 0,04 m/s), with the shortest time taken to perform the kick (0,70 ± 0,01 s) as compared to the results obtained with other positions of the upper body.

### Conclusions and discussion

In combat sports, athletes strive to strike the opponent with the highest speed and force (Gulledge & Dapena, 2008). In kickboxing, speed and force are necessary, because the combat pace is very fast, and athletes make kicks at great speed. Speed depends on the strength, but during the combat in such events as

point fighting, light contact, and kick light, it is important to control the force of kicks, because strong kicks are forbidden by the competition rules. The ability to control the force of the kicks during performance constitutes the difference between high-level athletes and amateurs.

Force is also necessary at the start of the kick, because the start of the kick is similar to the start of sprinting in track and field events. It is a complicated motor task characterised by great force that has an impact in multiple directions and by an ability to generate this force in a short period of time (Fortier, Basset, Mbourou, Favérial & Teasdale, 2005). As has already been mentioned, during the combat athletes perform kicks with great speed, but to develop this speed, the moment of the foot take-off is vital. The take-off stage for the foot influences the total performance speed of the kick. In the take-off stage, it is necessary to take the foot off the support with maximum speed, and strength is necessary to do this. Again, we conclude that speed is impossible without strength.

The initial position is an important factor in the athletic achievement in combat. In both attack and defence, athletes usually assume the position that is most comfortable for them (Estevan, Falco & Jandacka, 2011) or from which they can develop the greatest speed of the kick. Certainly, speed plays an important role in kickboxing, but, without sufficient preparation before the kick is performed, even high speed will not help to attack successfully. Before making a kick during combat, it is necessary to ensure the correct conditions are there: the position is comfortable and corresponds to the actions to be made. Accordingly, if an athlete wants to hit using hands in attack, the weight will be shifted more to the front foot. For a kick, the weight is to be shifted to the foot that is positioned to the back.

Estevan et al. analysed mechanic values, performing kicks in three positions of the upper body (0°, 45°, 90°). Mechanical measurements analysis was performed using two 3D force platforms and eight motion capture systems. The study found that the reaction and performance times are shorter in a hook kick when the upper body is at 0° and 45° than at 90°. Moreover, significant negative correlation was found for each upper body position between the ground reaction force maximum and the kick performance time. Furthermore, in each position of the upper body, the maximum force had positive correlation with the upper and lower leg speed. The scholars concluded that the body position influenced the athlete's kick performance techniques and recommended against athletes taking their upper body to the position of 90° from the vertical, as this prevents them from performing the hook kick in the best possible way (Estevan, Jandacka & Falco, 2013; Falco, Estevan & Vieten, 2011; Jandačka, Estevan, Janura & Falco, 2013).

In the current study, an analysis of the side kick was implemented likewise using force platforms and infrared motion capture cameras. Based on the results of the study, and in difference from the study of Estevan (Estevan, Falco &

Jandacka, 2011), the correlation between the speed of the side kick and the support reaction force in performing a side kick while standing, in moving forward and in counterattack in three positions of the upper body ( $0^\circ$ ,  $45^\circ$ ,  $90^\circ$ ) was not detected. In performing a side kick while standing and in moving forward, the lowest kick performance speed was registered for the upper body positions at  $0^\circ$  and  $45^\circ$ . The fastest kick was registered at the upper body positions at  $0^\circ$  and  $45^\circ$  similar to the study by Estevan et al. in performing a side kick with the front foot in counterattack, the shortest kick performance time and the fastest kick was registered with the upper body set at  $0^\circ$  to the vertical axis.

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# PERFORMANCE ANALYSIS OF THE U22 WOMEN EUROPEAN BOXING CHAMPIONSHIPS

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**Abstract.** *In recent years, women's boxing has undergone a significant transformation, becoming not only a popular sport but also an important phenomenon within the contexts of globalization and gender equality. The refinement of athletes' training programs through analytical examination of competitive performances is deemed a critical aspect. However, only a limited number of studies have been conducted exploring the performance indicators of amateur women's boxing. The aim of the research is to determine the performance indicators of female boxers at the U22 European Championship 2023 and to conduct a comparative analysis of winners and losers. The study employs the following methods: analysis of scientific literature, video analysis of boxing bouts, and methods of mathematical statistics. This investigation analysed 12 concluding matches with 24 contenders, identifying punches and movements via video review. It was found that winners, on average, deliver 8.4% more punches and execute 13.2% more movements than their opponents throughout the bout. Analysis revealed that winners are statistically significantly more active in moving around the ring during the second and third rounds and deliver more punches in the third round.*

**Keywords:** *analysis, boxing, movement, punch, women.*

## Introduction

In recent years, women's boxing has undergone significant transformation, becoming not only a popular sport but also an important phenomenon in the context of globalization and gender equality. This discipline has firmly entrenched itself within the international sports arena, witnessing a remarkable surge in popularity and recognition across the last several decades (Sage, 2015; Channon & Matthews, 2015; Tropin et al., 2023). As noted by a specialist: "Globalization in boxing and the sport's part in globalizing processes are marked by tensions between exploitation and the possibilities of liberation, and between entrenched traditional attitudes and the promise of change" (Woodward, 2014). A key moment in the development of women's boxing occurred in 2009 when the Olympic Committee announced that women's boxing would be included in the Olympic Games for the first time in 2012.

The corpus of research has traditionally been focused on the examination of male boxing. Nevertheless, the integration of women's boxing into the Olympic Games program catalyzed scholarly inquiry into gender stereotypes and their impact on sports (Beki & Gal, 2013). Research was conducted at various levels,

further propelling development in this direction (Bianco et al., 2009; Siska & Brodani, 2016; Hovden & Tjonndal, 2019; de Oliveira, Telles & Barreira, 2020).

The refinement of athletes' preparatory programs through the analytical examination of competitive performances is deemed a critical aspect (Zileli & Soyler, 2018; Latyshev et al., 2021; Djurabevich, 2022). Such research is regularly conducted for men's boxing. As for women's boxing, a limited number of studies have been found, which are mainly related to elite top athletes.

*The aim of the research* is to determine the performance indicators of female boxers at the U22 European Championship 2023 and to conduct a comparative analysis of winners and losers. The study employs the following methods: analysis of scientific literature, video analysis of boxing bouts, and methods of mathematical statistics.

### **Literature review**

The inclusion of women's boxing in the Olympic Games program elicited numerous discussions among experts. This development catalysed the initiation of comprehensive research focused on exploring the various aspects of women's boxing and gender stereotypes (Beki & Gal, 2013). Understanding the state of women's boxing, its history, and development was deemed crucial (Woodward, 2014; Barley & Harms, 2021).

There is no doubt that a key issue in sports is the preparation of athletes. In this context, a series of pertinent research studies have been conducted in women boxing, including identifying the differences between men's and women's boxing training (Chaabene et al., 2015; Mariante Neto & Wenez, 2022), studying the developmental trajectory and opportunities for women boxers (Moghadam, Phipps, Thelwell & Weston, 2020), and planning immediate preparation for competitions in women's boxing (Zileli & Soyler, 2018). Additionally, the discourse extends to consider the aspects of gender equality in coaching from the perspective of female boxers. This raises concerns among specialists about how gender perceptions influence athletes' experiences and coaching methodologies (Hovden & Tjonndal, 2019).

According to specialists, the performance analysis of competition is an important component of athletes' preparation (Martsiv, 2014; Ouergui et al., 2014; Latyshev et al., 2020). Identifying key trends and determining important indicators of winners and losers is a crucial moment in the analysis (El-Ashker, 2011; Kapo, El-Ashker, Kapo, Colakhodzic & Kajmovic, 2021; Djurabevich, 2022).

Despite the recent inclusion of women's boxing in the Olympic Games and the broad interest in boxing as a whole, a limited number of studies have been conducted that explore the performance indicators of amateur women's boxing. Specialists have conducted research on the competitive activity of female boxers

at the Olympic Games, which was aimed at identifying the main trends and indicators of the competitive activity of women athletes. Within this research, a comparative analysis with men's boxing was also conducted, and the main differences were identified (Davis, Benson, Waldock & Connorton, 2016; Slimani et al., 2017). Analogous patterns were discerned by researchers at the world championship level (Thomas, 2015).

Modifications to the bout regulations have markedly influenced the competitive performances of boxers in recent years (Kapo, Kajmovic & Rado, 2016; Davis, Connorton, Driver, Anderson & Waldock, 2018). Equally critical is the participation of athletes in competitions at the national and continental levels, serving as a pathway for their progressive ascension to the world level. To optimize sports training programs at the national level, it is important to consider the results of modern performance analyses of competitions at various levels. This necessitated the current study.

## Methodology

*The participants.* This study encompassed an analysis of 12 final bouts featuring 24 participants (12 winners and 12 losers) at the U22 Women's European Boxing Championships. The aforementioned tournament was held in Budva, Montenegro, from the 12th to the 19th of November, 2023. The videos of the bouts utilized for this analysis was sourced from the International Boxing Association's official YouTube channel (YouTube, 2023).

*The video analysis.* During the video analysis process, two groups of actions were identified: punches and movements of the athletes. Each athlete's performance was assessed independently. The bouts were analyzed in high-definition quality at a playback speed of 0.5. The analytical procedure entailed concurrent examination of the bouts by the first and second experts, who documented the observed actions. In instances of divergent opinions (discussions) regarding specific actions, an independent review by a third expert was conducted. The experts had more than 5 years of coaching experience. The aim of the video analysis was to systematically observe and document the technical actions performed by the athletes during the bout. (Thomson, Lamb & Nicholas, 2013; Thomas, 2015; Devesa & Pons, 2020).

This analysis encompassed all punches delivered by the athletes, regardless of whether they reached their target or not. The punches were divided into three groups: uppercut, hook, and straight punches.

Also, this study focused on significant movements of the athlete's body mass center, entailing a complete relocation of the athlete's body from one point to another (both feet occupying a new position in the ring, thereby transferring the entire body to a novel location). It should be noted that various torso movements,



feints, and in-place turns or rotations were not included in this analysis. The types of movements observed throughout the duration of the bout were:

Steps – basic steps and striding, moving around the ring without both feet leaving the ground (no flight phase).

Jumps – varieties of jumps, hops, and side steps, distinguished by both feet detaching from the ground, facilitating targeted relocation in a specific direction, used both for defence and for attack.

*Data Analysis.* All data were calculated separately for winners and losers. Mean values and standard deviations were computed for each indicator. The Mann-Whitney U test was applied to discern statistically significant variances between the indicators of winners and losers. All computational analyses were conducted utilizing the Python programming language.

### Research results and Discussion

Table 1 presents the statistical values of the number of punches executed by athletes who lost and won for each round/fight, as well as separate values for each type of punch.

*Table 1 Comparative Analysis of Women Boxers Performance Indicators of Punches*

Indicators		Statistical Values (Mean ± SD)			
		Round 1	Round 2	Round 3	Bout
Winners	Total punches	61.5 ± 16.3	60.4 ± 16.8	63.1 ± 11.1	185.0 ± 38.4
	Uppercuts	27.5 ± 7.5	24.0 ± 12.4	31.3 ± 7.5	82.8 ± 21.3
	Hooks	11.8 ± 7.2	12.8 ± 9.0	12.1 ± 5.9	36.7 ± 16.7
	Straight punches	22.2 ± 10.4	23.6 ± 10.3	19.7 ± 8.0	65.5 ± 19.9
Losers	Total punches	60.3 ± 20.3	53.9 ± 12.8	55.3 ± 10.9	169.5 ± 35.8
	Uppercuts	20.5 ± 8.5	20.0 ± 10.2	20.6 ± 7.2	61.1 ± 20.9
	Hooks	8.8 ± 5.9	11.1 ± 11.6	8.4 ± 7.3	28.3 ± 16.7
	Straight punches	31.0 ± 11.0	22.8 ± 11.3	26.3 ± 10.2	80.1 ± 22.6

In this study, winners on average deliver about 61.7 punches per round, contrasting with the challengers, who managed an average of 56.5 punches (8.4% less). Previously obtained results (Davis, Benson, Waldock & Connorton, 2016) at the Olympic Games 2012 are 49.1 and 40.1 executed punches by winners and losers, respectively (the difference being 22.4%), and at the World Championship 2014 (Thomas, 2015), 42.9 and 37.1 executed punches by winners and losers, respectively (the difference being 15.6%). It's important to note that the round duration is one minute longer, a direct juxtaposition with these prior results may not present an accurate comparative analysis. The difference between winners and losers is determined by many factors, and identifying a certain long-term trend when comparing with previous results is not possible: changes in the duration of

rounds and fight; level of competition; level of athletes (Barley & Harms, 2021; Kapo, El-Ashker, Kapo, Colakhodzic & Kajmovic, 2021).

The data analysis reveals that winners delivered more punches in each round and across the entirety of the bout. In the first round, the difference is almost insignificant (2.0%), increases in the second round (12.1%), and reaches a maximum in the third round (14.1%). Only between the results winners and losers in the third round were statistically significant differences identified ( $p < 0.05$ ). It is also important to note that winners in the final round perform 2.5% more punches than in the first, while losers deliver 8.3% fewer. This phenomenon underscores the criticality of specialized endurance (functional capacity) towards the bout's finale. In previously conducted studies, such a trend between losers and winners was not identified.

The analysis delineates that winners predominantly execute uppercuts (44.7%) and straight punches (36.1%), whereas the losers, favouring a similar pattern, predominantly perform uppercuts (34.0%) and straight punches (51.4%). Previous studies show a significant advantage of straights over other types of punches.

The subsequent phase of the research is the analysis of the number of movements of the athletes throughout the bout, with the analytical results delineated in Table 2.

*Table 2 Comparative Analysis of Women Boxers Performance Indicators of Movements*

Indicators		Statistical Values (Mean $\pm$ SD)			
		Round 1	Round 2	Round 3	Bout
Winn	Total movements	91.4 $\pm$ 15.5	91.8 $\pm$ 25.1	95.8 $\pm$ 31.0	279.0 $\pm$ 64.7
	Steps	54.5 $\pm$ 10.7	50.4 $\pm$ 11.0	54.8 $\pm$ 17.9	159.7 $\pm$ 33.8
	Jumps	36.9 $\pm$ 18.1	41.4 $\pm$ 27.6	41.0 $\pm$ 26.8	119.3 $\pm$ 68.9
Loser	Total movements	86.1 $\pm$ 23.1	75.9 $\pm$ 15.4	80.1 $\pm$ 20.7	242.1 $\pm$ 48.5
	Steps	52.8 $\pm$ 13.9	48.0 $\pm$ 13.0	53.8 $\pm$ 19.5	154.6 $\pm$ 40.5
	Jumps	33.3 $\pm$ 26.2	27.9 $\pm$ 21.0	26.3 $\pm$ 22.6	87.5 $\pm$ 65.6

As the analysis showed, women boxers who won move more around the ring across each round and cumulatively throughout the bout. They perform 13.2% more movements throughout the bout. Examining each round, it is important to note a trend towards an increase in the number of movements of the winners from round to round. Notably, statistically significant differences in the number of movements between winners and losers were identified in the second and third rounds ( $p < 0.05$ ).

It is pertinent to acknowledge that researchers employ various classifications for punches, defensive maneuvers, and movements during the bout. The study (Thomson, Lamb & Nicholas, 2013; Devesa & Pons, 2020) presents a classification encompassing all actions in boxing (more than 30), including 16

offensive actions, 20 defensive actions, and 4 feinting movements. Nevertheless, it has been observed that the majority of existing research utilizes only a limited number of indicators, dictated by the specific focus of the study, thereby restricting the potential for comparative analysis across studies and the elucidation of prevalent trends. In the context of our study, only the primary types of actions were selected because the main task was to assess the overall number of fundamental punches and movements, trends during the bout, and relationships. However, it should be noted that a more detailed examination of punches and movements in different variations (forward, side, in attack, defense, counterattack, and others) would have allowed for the analysis of action variability and provided practical recommendations in this direction.

The analysis facilitated the elucidation of overarching trends within female boxing contests, including the identification of combat density, distinct patterns, and model characteristics. Importantly, the research underscores the importance of the second and third rounds, wherein a significant advantage of one athlete over another was revealed. The data obtained allows for the optimization of training before competition, taking into account modern trends and leveraging the empirical advantage indicators of winners. The practical application of the results enables coaches to plan and modulate bouts in training process (El-Ashker, 2011; Djurabevich, 2022). Accordingly, these data can be used to construct training tasks during the direct preparation for competitions: simulation of certain elements of the bout (a whole round, the beginning of a round, the end of a round); a bout (round) with a certain density of punches and movements; delivery of specific punches / combos depending on the fight tactics.

## **Conclusions**

This study conducted a detailed evaluation of the final bouts at the U22 Women's European Boxing Championship, identifying key performance indicators related to the punches thrown and movements of the athletes during the matches; a comparative analysis of winners and losers was performed. It was found that winners, on average, deliver 8.4% more punches and execute 13.2% more movements than their opponents throughout the bout. Further analysis revealed that winners are statistically significantly more active in moving around the ring during the second and third rounds and deliver more punches in the third round, insights that should be integrated into training programs and tactical planning. Additionally, a pronounced preference for executing uppercut and straight punches was observed among the female boxers.

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# AIM AND MEANING OF BREATHING EXERCISES: INTERDISCIPLINARY LITERATURE REVIEW

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**Abstract.** Respiration is an indispensable aspect of life that significantly influences both the physical and mental well-being of individuals, depending on such factors as depth and rhythm. Exploring the distinctions between chest and abdominal breathing is crucial for understanding their profound impacts, and embracing appropriate breathing exercises has proven to be advantageous for short-term relief and long-term holistic health. While acknowledged for diverse therapeutic applications, such as mitigating vocal cord fatigue, a comprehensive exploration of breathing exercises remains essential. Sport scientists and coaches are encouraged to acquire a set of breathing exercises for future implementation in the training routines. This study strives to conduct an interdisciplinary literature review to shed light on the aims, meaning, and classification of breathing exercises. Employing a literature review methodology, we analysed peer-reviewed articles from PubMed and ScienceDirect published during the years from 2000 to 2023, focusing on such keywords as breathing exercises, deep breathing, nasal breathing, abdominal breathing, thoracic breathing, pursed-lip breathing, breathing control, and respiratory muscle training. The research findings illustrate the multifaceted definitions, components, aims, and classifications of breathing exercises. This study establishes a foundation for identifying distinct subtypes, contributing to a more nuanced understanding of the significance and purpose of breathing exercises in enhancing overall well-being.

**Keywords:** breathing exercises, meaning of breathing exercises, classification of breathing exercises.

## Introduction

In recent years, a growing number of studies have proved that breathing exercises can significantly improve the quality of life (Yiting, Zile, Wang, Xuanlin, & Yang, 2022). Research suggests that breathing exercises can be safely used and may have positive effects on the posture, flexibility, and strength of healthy adults (Csepregi et al., 2022).

It is known that breathing exercises cover a multitude of therapeutic approaches; however, in general, the meaning of breathing exercises is not defined (Bruton, Garrod & Thomas, 2011). There are many different views, but there is a lack of definitions for known breathing exercises. Trials involving breathing techniques have historically been published by simply describing the intervention

as involving a course of breathing exercises. Although most authors now provide more detailed explanations, it is still generally insufficient to allow an accurate replication.

The aim of this research is to conduct an interdisciplinary (medicine, physiology) literature review on the meaning of breathing exercises and their classification. The aim will be reached by researching scientific articles on the “PubMed” and “ScienceDirect” databases on the concept of breathing exercises, as well as by defining terminology and analysing the scientific literature and previous scientific studies that can contribute to defining and classifying the meaning of breathing exercises.

“Breathing exercises” is a phrase which is used by scientists and therapists to describe an aim and functions, but not the meaning of the exercises. Interventions used in clinical practice and research need to be described in sufficient detail to permit an accurate replication.

The current study is connected to previously conducted studies by the approach on breathing exercise application for the improvement of quality of life. Previous studies produced eight breathing exercise components that serve as the basis for the current study.

Several conducted studies show that breathing exercises can display different results depending on the approach to exercise application. Since words and phrases can change their meaning over time, it is important that authors choose their words carefully and define everything that might be considered too ambiguous. Unfortunately, currently no clear classification of breathing exercises is available.

## **The Research Methods**

In order to determine the definition and meaning of breathing exercises, the following methods were selected: a systematic search and review of scientific articles, comparative analysis, and generalization methods. The search for information sources published in English within the years 2000-2023 was carried out in the PubMed and Science Direct databases. Considering the topic, aim, and objectives of a scientific article, the following limitations were applied to the search results of the definition of breathing exercises: systematic reviews, review articles, books, target group - adult population, article language - English language. Keywords used for the search – breathing exercises, breathing exercise, deep breathing, nasal breathing, abdominal breathing, thoracic breathing, pursed-lip breathing, breathing control, respiratory muscle training. The search process was repeated 9 times, using each keyword. As a result, 19 sources were analysed in depth.

## Results and Discussion

The results of the research provided a clearer definition and use cases for studying breathing exercises. Research shows that information on breathing exercises and their definitions is very limited. As shown in Figure 1, the search for main keywords resulted in a broad range of articles that mention breathing exercises; however, only a limited number of articles correspond to the purpose of the study.

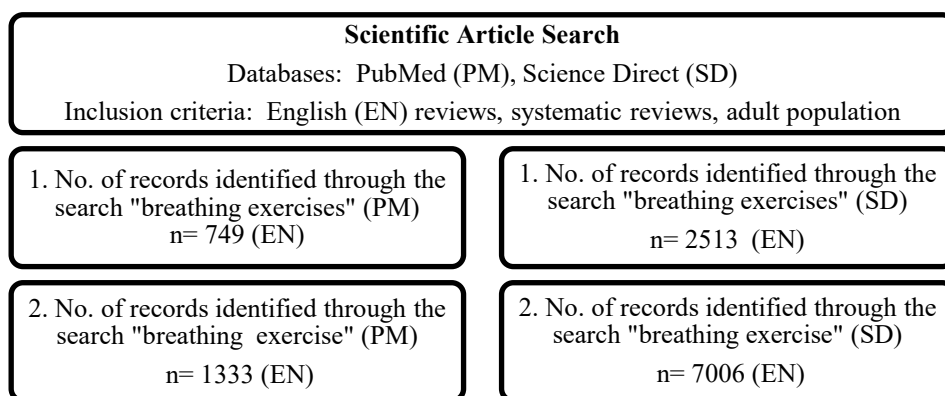


Figure 1 *The Process of Systematic Search (by the Authors)*

The search within the PubMed (PM) and Science Direct (SD) databases for the terms “Breathing exercises” and “Breathing exercise” with set limitations (publishing years 2000-2023; study type: review, systematic review, full-text; language: English) produced the following definitions (see Table 1):

Table 1 *Characteristics of Breathing Exercises*

Term/Studies Included in the Review	Definition	Author/s, Year
Breathing exercises PubMed - 2 articles	“Breathing exercises” is a phrase which covers a multitude of therapeutic approaches. The simple phrase “breathing exercises” has legitimately been used to encompass all the activities: breathing control, pursed-lip breathing, respiratory muscle training, thoracic expansion exercises, diaphragmatic breathing, abdominal breathing, deep breathing, nasal breathing.	(Bruton, Garrod & Thomas, 2011)
	“Breathing exercises” are a form of exercise which can improve the overall efficiency at which the lungs function. They can be helpful both in individuals with healthy lungs and in those with impaired lung function.	(Láis, Celso, Alex, & Mandy, 2019)



The search within the Science Direct database did not yield a result for a useful definition of the keyword “Breathing exercises”. In turn, the PubMed database produced 2 meaningful definitions that were included in Table 1.

Taking into account that breathing exercises cover a multitude of therapeutic approaches, the research was continued with the purpose to produce definitions for the subtypes of breathing exercises. The overall result for the term “Breathing exercises” produced 1029 articles on the Science Direct database and 49 articles on the PubMed database; however, searching for the definitions of breathing exercise components allowed for the search to be narrowed down and more clearer definitions to be obtained.

The search within the PubMed and Science Direct databases for the term “Breathing control” with set limitations (publishing years 2000-2023; article type: review, systematic review, full-text; language: English) produced 94 articles, of which 5 were included in the review and produced the following definitions (see Table 2):

*Table 2 Meaning of the Breathing Exercise Component “Breathing Control”*

<b>Breathing Exercise Component/Included in the Review</b>	<b>Definition</b>	<b>Author/s, Year</b>
<b>Breathing control</b> PubMed - 1 article	“Breathing control” is normal tidal breathing, using the lower chest with relaxation of the upper chest and shoulders. This used to be known as diaphragmatic breathing.	(Pryor & Prasad 2009)
<b>Breathing control</b> Science Direct – 1 article	“Breathing control” is a complex process that depends on different highly integrated pathways underpinning both automatic and voluntary commands. Breathing control involves brain’s motor, sensory and limbic areas, as well as midbrain structures, underlying the multidimensional aspects of such a system.	(Betka, Adler, Similowski & Blanke, 2022)

The definition obtained within the PM database gives clear instructions which describe the actions that should be taken for “breathing control”. On the other hand, the definition within the SD database provides a more detailed description of the processes that are involved during “breathing control”.

The search within the PubMed and Science Direct databases for the term “Pursed-lip breathing” with set limitations (publishing years 2000-2023; study type: review, systematic review; language: English) produced 34 articles, of which 3 were included in the review and produced the following definitions (see Table 3):

*Table 3 Meaning of the Breathing Exercise Component “Pursed-Lip Breathing”*

<b>Breathing Exercise Component/Included in the Review</b>	<b>Definition</b>	<b>Author/s, Year</b>
<b>Pursed-lip breathing</b> PubMed - 1 article	“Pursed-lip breathing” is a technique that allows people to control their oxygenation and ventilation. The technique requires a person to inspire through the nose and exhale through the mouth at a slow controlled flow.	(Nguyen & Duong, 2023)
<b>Pursed-lip breathing</b> Science Direct – 1 article	“Pursed-lip breathing” is another method, often associated with relaxation activities, suggested for improving ventilation and oxygenation and relieving respiratory symptoms in individuals with airway clearance dysfunction.	(Tecklin, 2007)

The definition found within the PM database describes the technique mechanics, but it does not provide any details of the effect of “pursed-lip breathing”. In turn, the definition found within the SD database suggests that the exercises in question have a positive effect on people with airway clearance dysfunction, but it completely lacks the description of exercises themselves.

The search within the PubMed and Science Direct databases for the term “Respiratory muscle training” with set limitations (publishing years 2000-2023; study type: review, systematic review; language: English) produced 100 articles, of which 5 were included in the review and produced the following definitions (see Table 4):

*Table 4 Meaning of Breathing Exercise Component “Respiratory Muscle Training”*

<b>Breathing Exercise Component/Included in the Review</b>	<b>Definition</b>	<b>Author/s, Year</b>
<b>Respiratory muscle training</b> PubMed - 1 article	The application of skeletal muscle training principles to the respiratory muscles is a relatively new field. Strength and endurance training of the respiratory muscles can be achieved in normal humans and in patients with neuromuscular and chronic obstructive pulmonary diseases. This is a promising area, although further research is necessary to determine the indications for respiratory muscle training. Furthermore, it is still necessary to determine the optimal mode of training.	(Pardy, Reid & Belman, 1988)
<b>Respiratory muscle training</b> Science Direct – 1 article	Respiratory Muscle Training (RMT) can be defined as a technique that aims to improve the function of the respiratory muscles through specific exercises. Inspiratory Muscle Training (IMT) in particular has been shown to increase inspiratory muscle strength, respiratory muscle function, and might help to reduce dyspnoea on exertion.	(Pereira, Dacha, Testelmans, Gosselink & Langer, 2019)

The definition found within the PM database suggests that the Respiratory muscle training is a relatively new field; however, while it is a promising thought, the definition lacks any description of the possible exercises. Similarly, the

definition found within the SD database provides a use case of the technique, but no examples or descriptions of the exercise itself are found in the definition.

The search within the **PubMed** and **Science Direct** databases for the term “**Thoracic expansion exercises**” with set limitations (publishing years 2000-2023; study type: review, systematic review; language: English) produced 28 articles, of which 3 were included in the review and produced the following definitions (see Table 5):

*Table 5 Meaning of Breathing Exercise Component “Thoracic Expansion Exercises”*

<b>Breathing Exercise Component/Included in the Review</b>	<b>Definition</b>	<b>Author/s, Year</b>
<b>Thoracic expansion exercises</b> PubMed - 2 article	Thoracic expansion exercises are simply active inspirations with larger than normal breaths, followed by relaxed expiration. This larger lung volume increases airflow through peripheral airways and collateral ventilation channels, which increases the gas volume available to mobilize secretions during expiration.	(Fink, 2007)
<b>Thoracic expansion exercises</b> Science Direct – 1 article	Thoracic expansion exercises are deep breathing exercises that emphasize inspiration and breathing control is normal tidal breathing using the lower chest.	(Cecins, Jenkins, Pengelley, & Ryan, 1999)

The definition found within the PM database gives a clear description of the breathing exercise in question, as well as describes the effect of the exercise. However, no information is provided on what are the advantages of using the exercises included in the definition. In a similar manner, the SD database gives a brief description of the technique, but it does not provide any details of the effect of the exercises.

The search within the **PubMed** and **Science Direct** databases for the term “**Diaphragmatic breathing**” with set limitations (publishing years 2000-2023; study type: review, systematic review; language: English) produced 131 articles, of which 5 were included in the review and produced the following definitions (see Table 6):

The definition found within the PM database gives a brief description of the exercise and describes the effects of the exercise. However, it also emphasizes that the effects on human health should be further researched. In turn, the definition obtained on the SD database provides a brief description of the processes that are activated by performing the exercise, but the effect on the human body is not described.

Table 6 Meaning of Breathing Exercise Component “Diaphragmatic Breathing”

Breathing Exercise Component/Included in the Review	Definition	Author/s, Year
<b>Diaphragmatic breathing</b> PubMed - 1 article	Diaphragmatic breathing (DB) is slow and deep breathing that affects the brain and the cardiovascular, respiratory, and gastrointestinal systems through the modulation of autonomic nervous functions. However, the effects of DB on human health need to be further investigated.	(Hamasaki, 2020)
<b>Diaphragmatic breathing</b> Science Direct – 1 article	Abdominal breathing is also known as diaphragmatic breathing. The diaphragm is the biggest and most important muscle of respiration. When the diaphragm contracts, it is forced downward, causing the abdomen to expand. This produces a negative pressure within the thoracic cage, forcing air into the lungs.	(Maker-Clark, 2012)

The search within the **PubMed** and **Science Direct** databases for the term “**Abdominal breathing**” with set limitations (publishing years 2000-2023; study type: review, systematic review; language: English) produced 119 articles, of which 3 were included in the review and produced the following definitions (see Table 7):

Table 7 Meaning of Breathing Exercise Component “Abdominal Breathing”

Breathing Exercise Component/Included in the Review	Definition	Author/s, Year
<b>Abdominal breathing</b> PubMed - 1 article	Abdominal breathing is breathing that is dominated by the movement of the diaphragm that expands the abdominal wall if chest movement is controlled, while thoracic breathing is dominated by accessory inspiratory muscles (e.g., external intercostal muscles, scalenus, pectoralis, and sternocleidomastoid) that increase the diameter of the thoracic cavity.	(Anderson & Bliven, 2017)
<b>Abdominal breathing</b> Science Direct – 1 article	Abdominal breathing is also known as diaphragmatic breathing. The diaphragm is the biggest and most important muscle of respiration. When the diaphragm contracts, it is forced downward, causing the abdomen to expand. This produces a negative pressure within the thoracic cage, forcing air into the lungs. The negative pressure also pulls blood into the chest, increasing venous return to the heart. This leads to improved cardiac output, which results in improved stamina in both disease and athletic activity.	(Maker-Clark, 2012)

The definition found within the PM database provides a brief description of the exercise, but the information is not sufficient to correctly replicate the exercise. Similarly, the SD definition describes the effect of the exercise; however, it does not give full details on how to perform the exercise correctly.

The search within the **PubMed** and **Science Direct** databases for the term “**Deep breathing**” with set limitations (publishing years 2000-2023; study type: review, systematic review; language: English) produced 263 articles, of which 3 were included in the review and produced the following definitions (see Table 8):

*Table 8 Meaning of Breathing Exercise Component “Deep Breathing”*

<b>Breathing Exercise Component/Included in the Review</b>	<b>Definition</b>	<b>Author/s, Year</b>
<b>Deep breathing</b> PubMed – 1 article	As diaphragmatic (abdominal) breathing (DB) is a slow and deep breathing method, it should not be considered as just a breathing control.	(Bruton, Garrod, & Thomas, 2011)
<b>Deep breathing</b> Science Direct – 1 article	Deep breathing, also known as diaphragmatic breathing, is one of the least time-consuming techniques to employ and easiest for adults and children to learn. When a person becomes anxious and/or experiences pain, breathing becomes shallow and irregular due to the increased muscle tension in the chest.	(Waldman, 2011)

The definition found within the PM database provided a brief description of the exercise, but it did not contain any information on the effect of the exercise on the human body. In a similar manner, the definition found within the SD database gives brief information on the technique, but the effects on the human body are not described, nor is the exercise method.

The search within the **PubMed** and **Science Direct** databases for the term “**Nasal breathing**” with set limitations (publishing years 2000-2023; study type: review, systematic review; language: English) produced 76 articles, of which 4 were included in the review and produced the following definitions (see Table 9):

*Table 9 Meaning of Breathing Exercise Component “Nasal Breathing”*

<b>Breathing exercise component/included in review</b>	<b>Definition</b>	<b>Author/s, Year</b>
<b>Nasal breathing</b> PubMed - 1 article	Nasal breathing is defined as inspiration through the nose and expiration through the mouth, whilst mouth breathing is the converse of this: inspiration through the mouth and expiration through the nose.	(Settergren et al., 1998)
<b>Nasal breathing</b> Science Direct – 1 article	Nasal breathing is involuntary. Mouth, or voluntary, breathing occurs when there is difficulty breathing through the nose, such as in exertion, under stress, and – in particular – when cardiac, pulmonary, or other illness hampers the supply of oxygen to the tissues.	(Gilbert, Chaitow, & Bradley, 2014)

The definition found within the PM database contains a brief description of the exercise itself, but it does not contain any information on the effect of the exercise. In contrast, the definition found within the SD database covers the

overall information on Nasal breathing, but it does not provide any description of the exercise.

### Classification

The search within the particular databases did not produce multiple definitions for the same exercise subtype. Only one clear definition per exercise was discovered within a particular database. The results show that 3 out of 8 subtypes of exercises have different names, but they still have the same meaning and are used as synonyms (Fig.2).

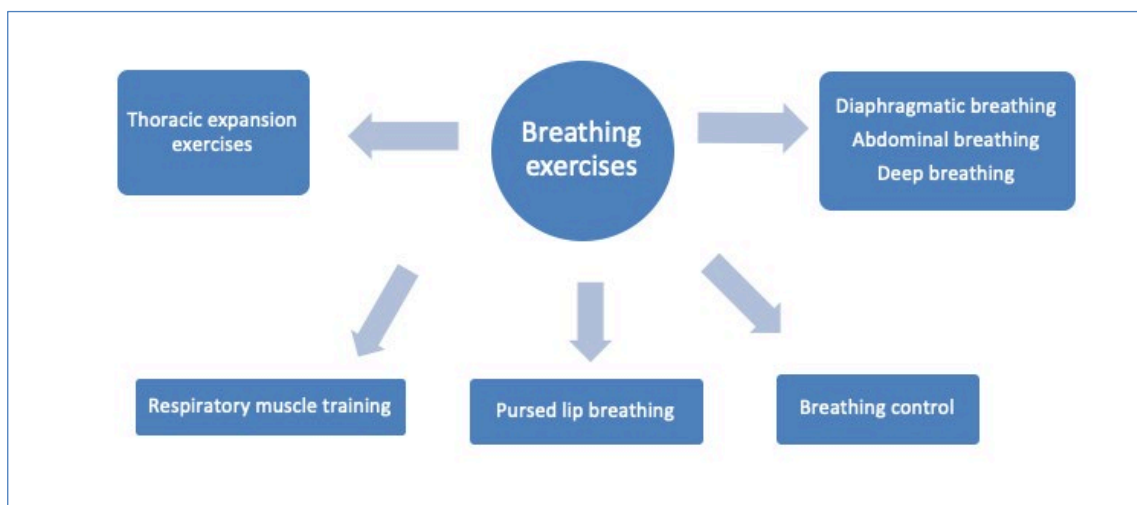


Figure 2 *Classification of Breathing Exercises (by the Authors)*

### Conclusions

The findings of this research underscore the importance of continued exploration and refinement of breathing exercises in the context of physiology, specifically addressing the critical objective of mitigating vocal cord fatigue. The primary focus of this study has been the identification and selection of exercises that may be effective in reducing voice chord fatigue, contributing to the broader understanding of the physiological impact of conscious breathing control. In the realm of respiratory physiology, the study has provided valuable insights into the definition, aim, and classifications of breathing exercises. The significance of these exercises extends beyond general well-being, particularly showcasing their potential in targeted application, such as the reduction of vocal cord fatigue. This not only enhances our comprehension of the physiological mechanisms involved, but also lays the groundwork for tailored interventions in various health-related contexts.

It is imperative to emphasize the need for future research endeavours to expand the scope of databases and delve deeper into the definitions and meanings

associated with breathing exercises. This will further enrich our understanding and refine the selection criteria for exercises aimed at reducing vocal cord fatigue, contributing to the ongoing evolution of respiratory health practices.

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# QUALITY OF DISTANCE LEARNING IN SECONDARY SCHOOL SPORTS AND HEALTH CLASSES

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**Abstract.** Distance learning or remote studies can break the boundaries of time and space, as students can use computers or electronic devices (for instance, mobile phones and tablets) to instantly acquire learning resources and listen to teachers during remote classes. The pandemic led to procedures that changed the way teachers teach and communicate with students and families. All teachers faced such a situation for the first time, thus it was necessary to invent, acquire and apply new teaching methods in sports and health classes, in order to provide students with the planned amount of physical activity in sports classes, as well as to implement the curriculum. The human body is made for movement; therefore, a person feels best when they move regularly. The aim of this study was to evaluate the skills of sports teachers to apply digital teaching methods in secondary school sports and health classes, and the quality of distance learning. Research methods: the research used surveys, which were issued to 29 secondary schools in Latvia, as well as to 2 respondents from primary schools. In total, 34 respondents filled out the research survey. In order to determine the opinion of sports teachers on the quality of distance learning in sports classes in secondary school and the applied digital skills, interviews were conducted with the participation of 5 sports teachers. Analysing the responses to the survey and the correlations between them, the research results show that if the sports teacher has not acquired digital skills, then online and distance learning cannot be provided, as well as the set learning results in sports in secondary school are not achieved.

**Keywords:** quality of distance learning, secondary school, sports and health classes

## Introduction

In 2020, the World Health Organization declared a pandemic due to the spread of the coronavirus (Covid-19) (WHO, IFRC, & Unicef, 2020). The Covid-19 pandemic has negatively affected many areas – social life, especially health, economy, education, and everyday life (Karaca & Kalayci, 2021). The coronavirus disease (Covid-19) pandemic forced people around the world to change their daily routines, including physical activity habits. This unusual situation also produced physical and psychological consequences, and behavioural changes for all individuals, including elite and amateur athletes and students. Life in a closed environment is difficult because everyone has to stay at home and stay healthy while following the new norms (Nieman, 2020).

Furthermore, it is important to note that physical activity has changed due to the Covid-19 pandemic, and this has a significant impact on sports teachers and students. In the near-overnight shift to distance learning as a result of the Covid-19 pandemic, many teachers used trial and error methods to implement distance learning (Jeong & So, 2020). As a marginalized area of subjects, sports teachers are often left alone to figure out how to deliver high-quality sport without any support (Richards, Gaudreault, Starck & Woods, 2018). It is reasonable to assume that the pandemic further isolated sports teachers and forced them to make decisions that affected the learning results of students (Mercier et al., 2021). During the pandemic, attempts to continue education for students around the world were and are very different, with significant differences in access to technology that could support distance learning, for example, books, TVs, smartphones, and the internet (Varea, González-Calvo & García-Monge, 2022).

In the 21<sup>st</sup> century, it is necessary to talk about a new generation of people, which can be defined as a digital generation, whose existence is an integral part of the possibilities provided by digital technologies (Baldiņš, 2017). Digital pedagogy is the study and use of modern digital technologies in teaching. Moreover, digital pedagogy can be used in online, mixed, and offline learning environments (Väätäjä & Ruokamo, 2021). The digital skills of teachers equal an understanding of the role of digital technologies, the opportunities they create, and their importance in communication. Digital skills are the responsible and purposeful use of digital resources created by others, and the knowledge of the rules that must be followed when using information media (Daniela & Rūdolfā, 2019).

In education quality, the component “high-quality learning” consists of three sub-components – teaching and learning, the professional capacity of teachers, and the implementation of education programmes (Vossensteyn et al., 2019). The quality of a sports class is related to physical load application, as well as to development and social contacts, almost all interventions in physical education can stake a claim to making a positive difference to student learning (Jansone, Fernāte & Immere, 2014) and development across four domains: cognitive, affective, psychomotor, and social (Dudley, Mackenzie, van Bergen, Cairney & Barnett, 2022).

Distance learning or remote studies allow students to use computers or electronic devices (for instance, mobile phones and tablets) to instantly acquire learning resources and to listen to teachers remotely (Salama, Uzunboylu & Alkaddah, 2020). Distance learning can be used to a certain extent and in situations where it is an effective solution for ensuring a high-quality offline learning process and strengthening self-directed learning skills (Valsts izglītības satura centrs, 2020). In response to the spread of the coronavirus (Covid-19), schools in many countries around the world introduced distance learning to address student learning issues during school closures (Morgan, 2020). To carry out the distance learning process, many communication and learning platforms

were used during the pandemic, for example, Zoom, MS Teams, and E-class. Inclusion and promotion of movements through distance learning and online education should be a common practice regardless of the age of students. Furthermore, teachers can reduce the lack of movement and sedentary behaviour (Heather, 2020).

By analysing distance learning, researchers have defined issues as the difficulties associated with conducting secondary school and secondary school online sports classes. The issues included the monotony of the classes, the limited environmental conditions, and the limited educational content, which did not sufficiently reflect the value of sports education (Jeong & So, 2020). Without the physical presence of a sports teacher, it is difficult to encourage students to engage in healthy physical activities (Šišlova & Fernāte, 2018), while also motivating students to enjoy these activities (Mercier et al., 2021). Significant influencing factors were determined by collecting scientific articles, for example, the digital skills of the teacher, digital teaching aids, the content of the sports class, the availability of technology, the assessment of students, the involvement of students in physical activity, data security, the support from the education institution for the teacher (Varea et al., 2022; Korcz, 2020; Baena-Morales, López-Morales & García-Taibo, 2020; López-Fernández, Burgueño & Gil-Espinosa, 2021; Jeong & So, 2020). The aim of this study is to evaluate the skills of sports teachers to apply digital teaching methods in sports and health classes in secondary school, and the quality of distance learning.

### **Research Methods**

In order to achieve the aim of the study, surveys and interviews were used in data collection. The research survey was developed based on scientific knowledge on the distance learning process and the structure of survey development. The survey included a range of questions on the digital skills of teachers and experience in using them, the form for submitting tasks to teachers, on the application of recommendations of the National Centre for Education in the distance learning process, the purchase of additional tools for the acquisition of the sports and health subject, the digital tools used in conducting sports and health classes, the application of synchronous and asynchronous learning methods, about the physical and practical activities and the time devoted to theory in the distance learning process, as well as the quality of distance learning in a sports class. The survey consisted of 46 questions. The survey was conducted in an electronic environment.

The content of the interview was developed based on scientific knowledge on the distance learning process. With the help of interviews and the 17 questions included in them, the opinions and work experience of sports teachers were determined regarding the quality of distance learning in secondary school sports

classes, as well as the skills of teachers in applying digital teaching methods in sports classes.

The survey took place from May 2022 to December 2022 in 29 secondary schools in Latvia and included 2 respondents from elementary schools. Representatives of all regions of Latvia from Riga, Latgale, Vidzeme, Kurzeme, and Zemgale participated in the survey. In total, 34 respondents filled out the research survey. Overall, 59% of research participants were female, and 41% - male. The age of the sports teachers was from 23 to 70 years, and the length of service at a school was from 1 year to 33 years. In total, 5 sports teachers participated in the interviews.

For the survey (survey and interviewing), an opinion was received from the Ethics Commission of the Latvian Academy of Sport Education regarding the compliance of the content and procedure with ethical norms.

The obtained data were entered and mathematically processed with SPSS software. The Kolmogorov-Smirnov test was used to determine whether the results of the surveys corresponded to the normal distribution. The correlation method was used to determine the correlation between the answers given by the teachers about the quality of distance learning in sports and health classes, and the digital teaching methods used by secondary school sports teachers.

## **Research Results**

Analysing the answers of the respondents to the survey questions in general, it can be concluded that the majority (41.2%) of the sports teachers who participated in the research had an average level of digital skills and abilities before the pandemic. However, when analysing the assessment of sports teachers about the acquired digital skills to conduct sports classes during the pandemic, it can be concluded that 73.5% of the research respondents improved their digital skills to conduct sports classes remotely. The majority of respondents (41.2%) believe that the use of digital skills when conducting sports and health classes remotely only partially ensures the achievement of learning results in sports classes. This means that distance learning in sports and health cannot ensure the full achievement of learning results. It can be concluded that teachers used more synchronous than asynchronous learning approach, which means that more sports classes were conducted online, in one of the communication platforms.

The largest number of respondents (47.1%) indicated that on average, students devoted 40 minutes to remote physical activities in sports and health classes, which is the same time as in offline classes. The use of sports mobile apps in the distance learning process was also common. For instance, various pedometer apps were used to organize classroom competitions to support physical activity using steps, kilometres or minutes spent in sports activities, as also mentioned in a previous study on distance learning in sports (Heather, 2020). The

majority of respondents (52.9%) indicated that students lacked computers to participate in the distance learning process in sports, while 47.1% stated that there was no shortage of computers. Moreover, the majority of respondents (88.2%) indicated that there was no need to purchase equipment in order to acquire the relevant topics in remote sports classes, thus it can be concluded that most of the surveyed sports teachers followed the National Centre for Education guidelines, which stated that students should not purchase additional sports equipment to acquire the sports and health subject during distance learning (National Centre for Education (NCE), 2020, 2021).

Analysing the responses of the respondents on digital technologies and the possibilities of conducting the introductory preparation part of classes remotely, it can be concluded that 86% of the respondents most often used a video prepared by other authors in the introductory preparation part of the class, which was available in the digital environment, for example, on “YouTube”. In turn, mobile applications were used the least in the introductory preparation part of the class. When analysing the answers of the respondents, it can be concluded that most often the respondents (83%) conducted the main part of the sports and health class on some online platform, and showed the exercises themselves or used a video prepared by other authors. Presentations were rarely shown in the main part of the sports and health class, which is due to the fact that they include more theoretical tasks and theoretical tasks were used less (11%-30%) than practical sports tasks (71%-90%) in remote sports classes. Analysing the answers of the respondents on conducting the final part of the sports and health class using digital teaching methods, it can be concluded that 77% used videos prepared by other authors, while 74% also showed the exercises of the final part themselves on one of the communication platforms. A smaller number of respondents (43%) also used one of the mobile applications that can be used in the final part of sports.

By analysing the opinion of the respondents and their experience gained on providing feedback after given remote sports tasks, it can be concluded that the majority (64.7%) believe that students received partially sufficient feedback, while 23.5% believe that the feedback was insufficient.

In the question on student evaluation during the distance learning process, the opinions and experiences of teachers differed, because the evaluation was different for each teacher, as it could include student participation in online classes, self-evaluation, distance, and time completed in independent tasks, theoretical knowledge of the rules of sports, and independently developed exercise complexes. In terms of grades during distance learning, all sports teachers interviewed indicated that the grades improved because it was easier to earn higher grades, as the content of remote sports classes was simpler, and students were more difficult to assess.

Evaluating the opinions of sports teachers on the quality of distance learning in sports and health classes in secondary school and the skills of teachers in

applying digital teaching methods in sports classes, it can be concluded that the assessment of sports teachers about their digital skills to conduct sports classes remotely has a weak negative correlation with the statement that if a sports teacher has acquired and will apply digital teaching methods, then the achievement of learning results in sports classes is ensured when organizing online learning ( $r_s = - 0.448, p < 0.01$ ). The opinions of the teachers on sports and health classes led by sports teachers online (on one of the communication platforms) have a weak negative correlation with the opinions on the quality of secondary school content acquisition during distance learning in sports and health ( $r_s = - 0.310, p < 0.05$ ). The opinions of the teachers on sports classes led by sports teachers online (on one of the communication platforms) also has a weak negative correlation with the opinions on the quality of the learning results achieved in secondary school during distance learning in sports ( $r_s = - 0.426, p < 0.01$ ). The use of the Zoom platform in the distance learning process, while conducting sports and health classes online, has a weak correlation with the quality of the learning results achieved in secondary school during distance learning in sports ( $r_s = 0.326, p < 0.05$ ).

The use of the MS Teams platform in the distance learning process, while conducting sports and health classes online, has a weak correlation with the frequency of using synchronous learning (online classes (live)) in the distance learning process, where students and teachers must be online at the same time ( $r_s = 0.325, p < 0.05$ ). The frequency of a teacher posting their own exercises online in the main part of the sports and health class closely correlates with the frequency of broadcasting their own exercises online at the end of the sports and health class ( $r_s = 0.774, p < 0.01$ ). The frequency of using the mobile application Strava in remote sports and health classes has a weak negative correlation with how much time students spent on physical activity in remote sports and health classes ( $r_s = - 0.382, p < 0.05$ ). The frequency with which a teacher broadcasts their own exercises online in the main part of the sports and health class also has a weak correlation with synchronous learning in the remote sports and health classes ( $r_s = 0.294, p < 0.05$ ).

The frequency of broadcasting online video exercises prepared by other authors in the main part of the sports and health class has a weak correlation with the percentage of time students spent doing the practical tasks in the sports and health classes remotely ( $r_s = 0.360, p < 0.05$ ). The frequency of broadcasting online video exercises prepared by other authors during the final part of the sports and health class has a moderately close correlation with the percentage of time students spent doing the practical tasks in the sports classes remotely ( $r_s = 0.578, p < 0.01$ ).

The frequency of how much time on average students devoted to physical activity per day during the distance learning process in sports and health has a weak negative correlation with the quality of secondary school content acquisition

during distance learning in sports and health classes ( $r_s = -0.302$ ,  $p < 0.05$ ) and with the quality of the learning results achieved in secondary school during distance learning ( $r_s = -0.387$ ,  $p < 0.05$ ). The assessment of sports teachers on the quality of secondary school content acquisition during distance learning in sports has a moderately close correlation with the quality of the learning results achieved in secondary school during distance learning in sports and health ( $r_s = 0.621$ ,  $p < 0.01$ ). The closest correlations were found between the use of mobile applications in the introductory preparation part and the final part ( $r_s = 0.889$ ,  $p < 0.01$ ).

Furthermore, there was a close correlation between the frequency of a teacher broadcasting their own exercises online in the introductory preparation part and the final part of a sports and health class ( $r_s = 0.739$ ,  $p < 0.01$ ).

There was also a close correlation between the frequency of broadcasting an exercise video online prepared by other authors in the introductory preparation part and the final part of the sports and health class ( $r_s = 0.700$ ,  $p < 0.01$ ).

Analysing the answers provided by sports teachers in the interviews to the question about the digital competences of a teacher, all of them indicated that they had sufficient digital competences during distance learning. In the interviews, when answering the question “Was the teacher training programme for information and communication technology (ICT) mandatory?”, 4 respondents answered that it is mandatory for them in educational institutions, but one respondent said that it is not mandatory. Therefore, for the majority of teachers, the schools ensure the improvement of the structural quality component – human resources. In the interviews, all teachers mentioned that they were provided with support at educational institutions during distance learning, both from the school management and from colleagues. The secondary schools of the surveyed sports teachers organized courses for teachers on digital technologies and the organization of distance learning, using digital teaching methods. All five respondents indicated that they had good development opportunities to integrate ICT in their sports classes, ICT were acquired both in school-organized training and through self-learning, thus the structural quality for providing learning resources was promoted.

## **Conclusions**

Sports teachers believe that they have sufficient digital skills to implement the learning process remotely; however, when analysing the answers of the surveyed secondary school sports teachers, it can be concluded that the distance teaching work in a sports and health class partly corresponded to high-quality content acquisition in secondary school. More than half (52.9%) of the respondents indicate that the quality of the learning results achieved in remote

sports and health classes partly corresponds to the high-quality acquisition of the sports and health subject in secondary school.

The digital learning methods that the surveyed sports teachers use most often in person even after the distance learning process in sports and health classes are mobile applications, communication platforms, the use of teaching videos prepared by other authors, the implementation of theoretical tasks in the sports and health subject on communication platforms, as well as video tests and presentations in offline sports and health classes.

The research proves that if a sports teacher has acquired and will apply digital teaching methods, then the achievement of learning results in sports and health classes is ensured during the distance learning organization, as the quality of learning content acquisition in sports and health during secondary school distance learning has a connection with the quality of the learning results achieved.

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## PECULIARITIES OF JUNIOR BALLROOM DANCERS' MOTIVATION

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**Abstract.** *The aim of this research is paid to the peculiarities of junior ballroom dancers' motivation. The sample of the research consisted of 70 12-15-aged junior ballroom dancers – 40 girls and 30 boys. The sport motivation scale (SMS) was chosen in order to reveal this issue. The study revealed that the internal motivation of junior dancers was expressed more than the external motivation, but some statements that reflect the internal motivation were evaluated differently by the dancers. The dancers did not have a strong opinion – they doubted the statements of the external motivation subscales. The dancers mostly disagreed with the following statements: I dance because my friends and other people respect and appreciate me for it and I dance because I think it's one of the best ways to make friends and communicate. The amotivation of the dancers was not strongly expressed. They did not doubt their success, why they were dancing and they had no thoughts that they will not achieve their intended purpose. The girls that dance ballroom dances have higher internal motivation – to find out and internal motivation – experience; meanwhile, the boys had stronger internal motivation – to strive for perfection. It was also revealed the external motivation – to get identified and coincide – was important for the junior dancers of the both groups.*

**Keywords:** *amotivation, ballroom dancing, external motivation, internal motivation.*

### Introduction

Currently, ballroom dancing is at the peak of popularity, as the number of children and teenagers who want to dance is growing. However, no matter how popular the ballroom dances are, without knowing the peculiarities of motivation, it would be difficult to prepare young dancers for competitions. In pursuance to increase the motivation of young athletes, the promotion of motivation for the chosen sport plays an important role (Baligad & Martin, 2017; Huang, Hogg, Zandieh, & Bostwick, 2012; Vallerand & Toward, 1997). According to (Howard, Gagne, Morin, & Van den Broeck, 2016) inappropriate athletic performance is often caused by a lack of motivation. Therefore, the problem of research on the motivation of sports activities is definitely relevant. For example, when analyzing the issue of motivation in a sports context, it is observed (Deaner, Balish, & Lombardo, 2016; Guilbault, Harvey, & Vallerand, 2020) that the motivation of young athletes differs. However, in the findings of many scientific studies (Deaner et al., 2016; Kingston, Horrocks, & Hanton, 2006; Stenling, Lindwall, &

Hassmen, 2015) both young athletes, amateurs and professionals see the benefits of motivation as an opportunity to improve their athletic performance.

According to (Huang, Pan, & Lee, 2018; Stavridis, Kaprinis, & Tsirogiannis, 2015), young dancers with a high level of motivation view challenges as tasks that need to be overcome, in addition to having a greater interest in the sport in which they participate, have a stronger sense of responsibility and commitment, and recover more quickly from failures. According to (Alesi, Lopez-Gomez, Borrego, Monteiro, & Gallegos-Granero, 2019; Huang et al., 2018; Kingston, Horrocks, & Hanton, 2006), motivation is also associated with higher satisfaction with sports activities (higher sportsmanship, decreased withdrawal from sports activities, greater attention, better athletic performance. For example (Stavridis et al., 2015) state that the motivation of children who attend in sports is particularly strongly influenced by their maturity.

An analysis of the scientific literature in this area shows that greater confidence in success and less fear of failure are important conditions for maintaining motivation to exercise for a longer period of time (Kalinina, Suschenko, Scchegolev, & Barykin, 2018). Previous research (Bassett-Gunter, Rhodes, Sweet, Tristani, & Sultoni, 2017; Cain et al., 2015) indicates that children's main motives for sports are often based on the positive emotions they experience and the desire to experiment. Meanwhile, adolescents who exercise often refer to better physical condition as the main motive for exercising, as they become more sensitive to their physical changes and body image at that time. However, other works (Huang, Hogg, Zandieh, & Bostwick, 2012; O'Neill, Pate, & Beets, 2012) have shown that children have different reasons to play sports, have fun, improve their skills, exercise, hang out with friends or make new friends, compete. When looking at children's motivation in sports, gender bias is also noticeable - girls are more likely to choose aesthetic sports than dancing or gymnastics, while boys are more likely to choose team sports (Grimminger-Seidensticker, Mohwald, Korte, & Trojan, 2018).

According to (Nieminen, 2006), many ballroom dances are practiced because of movement, self-expression, and because dance allows emotions to be expressed at the same time. Also (Wang, Chow, & Amemiya, 2017) confirmed in their work that the motives for choosing this sport are determined by the joy of movement, socially acceptable physical contact. However, when analyzing the influence of the coach on children's motivation, it is noticeable that it is often difficult to apply specific motivational measures to children of different ages. Thus, based on the research of researchers in this field, it is observed that the main motives for promoting ballroom dancing are internal, such as self-expression, the opportunity to perform, satisfaction with the movements performed, the implementation of the discipline. However, external motives such as improving sports skills, coaching, or peer support should not be underestimated (Rokka, Mavridis, Mavridou, Kelepouris, & Filippou, 2015).

Although there seems to be clear enough evidence that sports motivation is related to the choice of sport, research with children and adolescents in sports requires a deeper examination of the topic. Without knowing the peculiarities of motivation, it is difficult to properly manage this multi-component process.

Therefore, it is very important to study the peculiarities of dancers' motivation in order to create the most favorable conditions for their physical and psychological education. **Research aim** – to determine the peculiarities of junior ballroom dancers' motivation.

### Methodology

The study involved 70 junior ballroom dancers (40 girls and 30 boys) aged 12–14. The respondents were selected by convenient sampling. On carrying out the questionnaire of the researched, the ethic and legal principles of research were observed, i.e., the aim of the questionnaire was explained to each participant of this research and the anonymity of their data was ensured. The questionnaire was carried out after the ballroom dance practice. The questionnaire lasted for 20 minutes.

The motivation of the dancers was assessed on the basis of “The sport motivation scale (SMS)” (Pelletier et al., 1995). This scale is based on the theory of self-determination (Deci & Ryan, 2000), which states that motivation has two sources of origin: internal and external. This scale consists of 22 statements, which are divided into 6 subscales: internal motivation – to find out; internal motivation – to strive for perfection; internal motivation – to experience; external motivation – to identify; external motivation – direct external regulation; amotivation. Answering to each statement, the respondents had to choose the variants in a five-staged scale from “absolutely no” (1) to “absolutely yes” (5). This questionnaire was adapted for young athletes to assess the internal compatibility of scales and subscales. The internal consistency coefficient Cronbach alpha in many subscales of the sports motivation scale was well above the acceptable 0.5 threshold and ranged from 0.58 to 0.82.

The following was performed by applying the data processing method – statistical analysis: descriptive data statistics: the means (M), standard deviations (SD), *Student's t* criterion for independent samples. The difference is considered statistically significant, when  $p < 0.05$ . The effect size was determined by applying the *Cohen d* criterion coefficient. Usually, the *Cohen d effect size that ranges between 0,2 and 0,5 is considered low, between 0,5 and 0,8 – average and above 0,8 – high one* (Bakker et al., 2019). The data was processed by applying version 22.0 package SPSS of the statistical data processing programme (IBM SPSS Statistics for Windows, Version 22.0.).

## Results

Analyzing the internal motivation of dancers – to experience – a significant difference between the dancers-girls and boys was obtained in response to the statement “I dance because I can experience pleasant sensations”. Dancers-girls agreed with this statement – the mean estimate for this statement was  $4.12 \pm 0.83$  points. The boys' response was on the positive side –  $3.42 \pm 0.51$  points ( $t(69) = 4.35$ ;  $p < 0.05$ ;  $d = 0.45$ ) (Table 1). Analyzing the statements of internal motivation subscale – to find out – a significant difference between the dancers-girls and boys was obtained in response to the statements „This kind of sport is interesting because I can gain an interesting experience” ( $t(69) = 4.94$ ;  $p < 0.05$ ;  $d = 0.51$ ), “Dancing is interesting as I learn more and more about this activity” ( $t(69) = 2.79$ ;  $p < 0.05$ ;  $d = 0.31$ ), and “Dancing is interesting because I learn new movements and training ways” ( $t(69) = 3.17$ ;  $p < 0.05$ ;  $d = 0.33$ ).

*Table 1 Indicators of junior ballroom dancers-girls and boys' internal motivation*

Subscales of motivation	Statement	Girls (M ± SD)	Boys (M ± SD)	t	p	Cohen d
Internal motivation – to find out	This kind of sport is interesting because I can gain an interesting experience	3.83±0.59	3.21±0.46	4.94	p<0.05	0.51
	Dancing is interesting as I learn more and more about this activity	4.55±0.96	3.97±0.78	2.79	p<0.05	0.31
	Dancing is interesting because I learn new movements and training ways	4.08±0.81	3.56±0.67	3.17	p<0.05	0.33
Internal motivation – to strive for perfection	I dance because I feel satisfied with new and challenging dance movements	3.79±0.64	3.64±0.53	0.14	p>0.05	0.13
	I dance because I feel pleasure in improving my weaknesses	3.68±0.55	3.77±0.71	-0.58	p>0.05	-0.07
	I dance because I really like dance music	3.78±0.72	4.24±0.83	-2.43	p<0.05	-0.28
	While dancing sport dances, I have the pleasure of learning	3.49±0.43	3.58±0.51	-0.78	p>0.05	-0.09

Subscales of motivation	Statement	Girls (M ± SD)	Boys (M ± SD)	t	p	Cohen d
	new movements all the time					
	I dance because I have the pleasure of learning new movements that I haven't learned before	3.96±0.77	4.43±0.87	-2.35	p<0.05	-0.28
	I feel a lot of pleasure in making movements while dance music is playing	4.50±0.94	3.91±0.72	2.97	p<0.05	0.33
Internal motivation – to experience	I dance because of the emotions I experience when I get involved in this activity	4.08±0.74	4.35±0.77	-1.48	p>0.05	-0.18
	I dance because I can experience pleasant sensations	4.12±0.83	3.42±0.51	4.35	p<0.05	0.45

Notes. M ± SD – mean and standart deviation; Cohen d – effect size

The indicators of internal motivation subscales of junior dancers-girls and boys is presented in Table 2. The dancers agreed with the motive groups – to find out, to strive for perfection and to experience. A statistically significant difference between the girls and boys was estimated in the motive group – to find out ( $t(69) = 3.33; p<0.05; d=0.36$ ).

Both the girls and boys agreed with the following statements in the subscale: „the sport is interesting because I can gain an interesting experience”, „dancing is intresting as I learn more and more about this activity” and „dancing is interesting because I learn new movements and training ways” and the average score for these statements of the girls was 4.15±0.79 points, of the boys - 3.58±0.64 points (Table 2).

*Table 2 Indicators of junior ballroom dancers-girls and boys' internal motivation*

Subscales of motivation	Girls (M ± SD)	Boys (M ± SD)	t	p	Cohen d
To find out	4.15±0.79	3.58±0.64	3.33	p<0.05	0.36
To strive for perfection	3.87±0.68	3.93±0.69	-0.33	p>0.05	-0.04
To experience	4.10±0.76	3.89±0.64	1.21	p>0.05	0.15

Notes. M ± SD – mean and standart deviation; Cohen d – effect size

In the motive group – to strive for perfection – the estimates of dancers-girls and boys do not differ statistically significantly ( $t(69) = -0.33$ ;  $p > 0.05$ ;  $d = -0.04$ ) and almost all the statements of this group are supported by the dancers.

Both the girls and boys equally agree with the statement „I dance because I feel satisfied with new and challenging dance movements” – this estimate is the same for the both groups –  $3.79 \pm 0.64$  points and  $3.64 \pm 0.53$  points. “Difficult to say” – such an answer option was chosen by the both groups of dancers in response to the statement „I dance because I really like dance music” ( $t(69) = -2.43$ ;  $p < 0.05$ ;  $d = -0.28$ ).

All the other claims of this motive group were accepted: the mean score for the girls-dancers was  $3.87 \pm 0.68$  points, for the boys –  $3.93 \pm 0.69$  points ( $t(69) = -0.33$ ;  $p > 0.05$ ;  $d = -0.04$ ).

However, assessing the overall scale of internal motivation – to experience – the dancers-girls and boys agree with the statements of this subscale: the mean estimate for the girls was  $4.10 \pm 0.76$  points, for the boys –  $3.89 \pm 0.64$  points ( $t(69) = 1.21$ ;  $p > 0.05$ ;  $d = 0.15$ ) (Table 2).

The external motivation in the motive subscale „identification/coincidence”, the statement for the girls-dancers „I dance because my friends and other people respect and appreciate me for it” is not important, but the boys' answers were significantly different: the mean score for the girls was  $2.84 \pm 0.46$  points, for the boys  $3.52 \pm 0.69$  points ( $t(69) = -4.67$ ;  $p < 0.05$ ;  $d = 0.50$ ) (Table 3).

The statement for the dancers-girls and boys „I dance because I want to show others what a good dancer I am” is not important. The girls and boys answered to this statement more negatively: the girls' mean score to this statement was  $3.21 \pm 0.51$  points, that of the boys –  $2.93 \pm 0.42$  points ( $t(69) = 2.52$ ;  $p > 0.05$ ;  $d = 0.29$ ). The most frequently chosen answer of the dancers to the other statements of this subscale was "difficult to say". The assessment of the other subscale of external motivation „Direct external regulation” is provided in Table 3.

Overall assessment of the subscale “Identification/coincidence”: for the girls-dancers, the overall score for this subscale was  $3.41 \pm 0.58$  points, for the boys –  $3.59 \pm 0.61$  points ( $t(69) = -1.25$ ;  $p > 0.05$ ;  $d = -0.15$ ). Overall assessment of the subscale “Direct external regulation”: for the girls-dancers, the overall score for this subscale was  $3.78 \pm 0.63$  points, for the boys –  $3.49 \pm 0.59$  points (Table 4).

Table 3 Indicators of junior ballroom dancers-girls and boys' external motivation

Subscales of motivation	Statement	Girls (M ± SD)	Boys (M ± SD)	t	p	Cohen d
External motivation – to get identified and coincide	I dance because my friends and other people respect and appreciate me for it	2.84±0.46	3.52±0.69	-4.67	p<0.05	-0.50
	I dance because I think it's one of the best ways to make friends and communicate	3.02±0.55	3.21±0.61	-1.34	p>0.05	-0.16
	I dance because this is one of the best ways to develop other personal qualities	3.92±0.74	3.29±0.63	3.84	p<0.05	0.42
	I dance because it can be useful in other areas of life (such as relationships with other people)	3.87±0.58	4.35±0.49	-3.75	p<0.05	-0.41
External motivation – direct external regulation	I dance because to be in good shape, it is necessary to move	4.12±0.84	3.62±0.66	2.79	p<0.05	0.31
	I dance because ability to dance is prestige	3.51±0.57	3.75±0.69	-1.55	p>0.05	-0.19
	I dance because people around me think it's important to learn to dance, look flawless, and be in good physical shape	4.27±0.61	3.66±0.57	4.29	p<0.05	0.46
	I dance because I want to show others what a good dancer I am	3.21±0.51	2.93±0.42	2.52	p>0.05	0.29

Notes. M ± SD – mean and standart deviation; Cohen d – effect size



**Table 4 Indicators of junior ballroom-dancers' girls and boys' external motivation**

Subscales of motivation	Girls (M ± SD)	Boys (M ± SD)	t	p	Cohen d
Identification / coincidence	3.41±0.58	3.59±0.61	-1.25	p>0.05	-0.15
External regulation	3.78±0.63	3.49±0.59	1.98	p<0.05	0.23

Notes. M ± SD – mean and standart deviation; Cohen d – effect size

Table 4 presents the estimates of the subscales for the external motivation of dancers-girls and boys. Both the dancers-girls and boys neither agreed nor disagreed with the statements of the subscales of the motive groups – „identification/coincidence” and „direct external regulation”, but the estimates in the subscale „external regulation” differ significantly between them ( $t(69) = 1.98$ ;  $p < 0.05$ ;  $d = 0.23$ ).

The dancers-girls and boys' amotivation is analysed in Table 5. The evaluation of the responses of the girls and boys to the statements of the amotivation subscale is negative.

**Table 5 Indicators of junior ballroom dancers-girls and boys' amotivation**

	Statement	Girls (M ± SD)	Boys (M ± SD)	t	p	Cohen d
Subscale of amotivation	I always knew why I was dancing, but now I doubt I should do it any further	3.69±0.54	3.54±0.58	1.10	p>0.05	0.13
	I don't know why I dance. I don't seem to be very lucky	3.57±0.51	3.72±0.65	-1.05	p>0.05	-0.12
	I often ask myself why I dance sport dances, because I didn't achieve goals I was aiming for	3.84±0.73	3.69±0.63	0.92	p>0.05	0.11

Notes. M ± SD – mean and standart deviation; Cohen d – effect size

Table 6 presents the estimates of dancers-girls and boys' amotivation. The mean score of the dancers-girls' amotivation is  $3.70 \pm 0.59$  points, that of boys –  $3.65 \pm 0.62$  points ( $t(69) = 0.34$ ;  $p > 0.05$ ;  $d = 0.04$ ). The dancers-girls and boys did not agree with the statements of the amotivation subscale and their estimates did not differ ( $p > 0.05$ ) (Table 6).

Table 6 Indicators of junior ballroom dancers-girls and boys' amotivation

Subscale of amotivation	Girls (M ± SD)	Boys (M ± SD)	t	p	Cohen d
	3.70±0.59	3.65±0.62	0.34	p>0.05	0.04

Notes.  $M \pm SD$  – mean and standart deviation; Cohen  $d$  – effect size

### Conclusions and discussion

On applying the sport motivation scale and comparing the obtained results of the research, it was determined ballroom dancers-girls had stronger *internal motivation – to find out* (they supported the following statements of the subscale more: „*This kind of sport is interesting because I can gain an interesting experience*“, „*Dancing is interesting because I learn new movements and training ways*“ and *internal motivation – to experience* („*I feel a lot of pleasure in making movements while dance music is playing*“) compared with the dancers-boys. Meanwhile, the boys had stronger *internal motivation – to strive for perfection* (“*I dance because I can experience pleasant sensations*”).

The results of this study are consistent with the results of similar studies (Uspuriene & Cepulenas, 2011), stating that the research with ballroom dancers' results showed that the internal motivation – to find out – is also strongly expressed among dancers-girls and boys. Previous research (Grimminger-Seidensticker et al., 2018) revealed the internal motivation was more important for participants of traditional and modern/classic dances when participating in competitions. However, it is difficult for us to compare the results of this research because we did not analyse any peculiarities of sport motivation for dancing adolescents over 15, especially those ones that dance traditional and modern/classic dances. The data of our research confirmed the results of (Baligad & Martin, 2017): a wish to dance is more related with the internal motivation of dancing girls, they state not only emotional factors are most important, but they also emphasize physical and artistic factors.

There are scientific studies (Sniras & Gedgaudaite, 2014), during which special attention is paid to the dependence of the motivation of sports activities of students attending ballroom dances in the place of residence. The results of this study showed that the internal and external motivation and motivation to succeed is higher for 13-15-year-old urban students attending ballroom dances than for district students. However, we cannot agree or disagree with the data from this study because we did not examine in why the motivation of adolescent athletes to exercise depends on the place of residence, making it difficult to compare this data as similar or contradicting the results of our study.

It was also revealed the *external motivation – to get identified and coincide* – was important for the young dancers of the both groups. The girls supported the statements of the subscale more: “*I dance because this is one of the best ways to develop other personal qualities*”, meanwhile, the boys – “*I dance because my friends and other people respect and appreciate me for it*” and “*I dance because it can be useful in other areas of life (such as relationships with other people)*”. The girls evaluated the *external motivation – direct external regulation* (“*I dance because people around me think it’s important to learn to dance, look flawless, and be in good physical shape*”) with a little higher index.

Among the young dancers, the external motivation is not strongly expressed like in the research of (Ušpurienė & Cepulenas, 2011), which results also showed that the external motivation of ballroom dancers was less expressed than the internal one. Meanwhile, the analysis of the motivation of dancers with different styles (Zaletel & Kajtna, 2020) revealed that male dancers were more oriented to the motive of force strengthening and female ones – to such motives as emotional relaxation, self-control and social understanding. The motives of self-respect and self-realisation are important for Latin-American, ballroom dance and rock’n’roll dancers and self-control – for modern jazz and ballet dancers. However, we cannot support the conclusions obtained in (Baligad & Martin, 2017) that a wish of students-boys is more related with social factors; in our case, the external motivation is also stronger for ballroom dancers-girls.

The amotivation subscale indexes are both similar for the girls and boys and they did not agree with the statements of the amotivation subscale.

The research conducted by both us and other authors (Ušpurienė & Cepulenas, 2011) showed that young dancers did not doubt their success, did not hesitate whether they were dancing and were not tormented by the thought that they would not achieve the intended goal. Nevertheless, the importance of sport motivation of young dancers is absolute because the sport activity takes place under tough conditions of practices and competitions when the maximum psychical resistance is necessary for the realisation of skills and abilities. The overview of scientific works shows it would be useful to prolong any further research revealing the peculiarities of formation of the motivation of young dancers or its expression in the aspects of environmental factors or sport location.

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## MEANING OF SPORT MONITORING AND ITS DEVELOPMENT TENDENCIES

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**Abstract.** *The earliest research on analytics in sports dates back to 1912 with the work by Hugh Fullerton on the correlation between baseball player hits, throws, and catching techniques, and success in the game. Nowadays with equally high technological and financial availability, the efficiency of the training process becomes more relevant. A well-organized and managed training process, combined with high technology and financial accessibility, will be the determining factor for successful performance. Research aim: to compare and analyse the meaning of sport monitoring and its development tendencies. Research methods: a systematic review of scientific literature was conducted, examining scientific articles available in the ScienceDirect and Google Scholar electronic databases (publishing date 2014-2024) using the following keywords: "monitoring", "sport monitoring", "performance monitoring", and "coaching monitoring". As a result of the study, the use of the term 'monitoring' in the context of the sport environment was clarified. The meaning and function of monitoring involves continuous systematic data collection based on selected criteria, with its most essential function being the ability to instantly inform involved parties about the characteristics of the performance process. Monitoring in sports is primarily applied in terms of athlete and team performance analytics. However, it is equally important to continuously and systematically observe the activities of coaches with the aim of providing feedback for improvement.*

**Keywords:** *coaching monitoring, monitoring in sports, performance monitoring, sport monitoring.*

### Introduction

The earliest study on sport performance analytics is considered to be the study by Hugh Fullerton in 1912 on the correlation between baseball players pitching, hitting, and catching techniques and their success in the game (Hughes & Franks, 2004). Performance analytics, or technically, the quantification of tactical actions, is widely spread in the field of sports, particularly in football, where the high level of development has led to extensive use of performance monitoring tools in the training processes.

The monitoring of sport training processes has been examined in the publication by Roy et al. (2018), concluding that internal and external training loads are measured and quantified in the process of sport performance monitoring.

While studying the process of monitoring training loads in elite-level English football, Weston (2018) indicates that the implementation of the monitoring process is not significantly expensive or time-consuming, citing the introduction of the "rated perceived exertion - RPE" scale for players' self-assessment of training load difficulty as an example. Effective monitoring of training loads and the ability to immediately adjust the training process are significant factors in achieving success in the field of sports.

Studies on the periodization systems of multi-year (macrocycle) training processes have been criticized for their validity and the lack of consideration of complicating reliability factors (Afonso et al., 2017). If control and supervision methods, or the opportunity to receive feedback, are not included in the periodization system, then its effectiveness is difficult to explain.

Another significant factor is insights from studies on the importance, content, and effectiveness of feedback in improving the quality of the learning process (Otte et al., 2020). The relevance, effectiveness, and timeliness of feedback are crucial for improving athlete performance. Unfortunately, the study by Cook & Dorsch (2014) indicates that negative, potentially abusive behaviour by coaches towards athletes is often encountered in the sport environment. Self-reflection and the ability to observe one's own performance from an outside perspective to prevent unwanted behaviour and problematic situations, and to optimize performance are emphasized as more essential skills for expert-level educators (Schempp et al., 2006; Webster & Schempp, 2008).

Authors Mallett & Côté (2006) note that the process of evaluating the actions of a coach has been under-researched. The most commonly mentioned aspect of evaluating coaches by authors is the win/loss ratio, which, in turn, does not reflect the broad and multidimensional framework of coaches' activities. Alongside the equally high relevance of technology and financial accessibility, the enhancement of training process effectiveness is regained. Nowadays, the equally high development of technology and financial accessibility has become a precondition for the effectiveness of the training process. A well-organized and managed training process with the use of high technology and financial investment is considered a decisive factor for successful performance (Sands et al., 2017). Identifying and evaluating successful performance factors in multi-year training processes is a fundamental prerequisite for ensuring successful performance. Therefore, the aim of this study is to compare and analyse the meaning of sport monitoring and its development tendencies.

### **Research methodology**

To research the essence of sport monitoring and its development trends, a systematic search and review (Booth, Sutton & Papaioannou, 2016) were conducted in two electronic databases of scientific literature: ScienceDirect (SD)

and Google Scholar (GS). Studies that met the following eligibility criteria were included for further screening: 1) were published in English, 2) were available in the electronic databases Google Scholar or ScienceDirect, 3) published from 2014 to 2024, 4) focused on the meaning of sports monitoring and its development tendencies. The keywords "monitoring", "sport monitoring", "performance monitoring", and "coaching monitoring" were used in the aforementioned language. Studies published from 2014 to 2024 were examined, and those that included the keywords in the title, abstract, or keywords were considered. The search process was repeated 3 times, resulting in the selection and in-depth examination of 10 studies.

### **Research results**

The study examined scientific articles available in English in the electronic scientific databases (SD) and (GS). Entering the same keywords, more articles were found in the ScienceDirect database. The highest number of publications was found when entering the keyword "monitoring" (n=397 100), followed by the more commonly used keywords "performance monitoring" (n=50 390), "sport monitoring" (n=932), and "coaching monitoring" (n=346) see in Figure 1.

It can be observed that the most frequently used term is "monitoring", which can be explained by its frequent use in a wide range of fields. When narrowing down the search range and adding the words "performance", "sport" and "coaching", it is noticeable that the number of found articles decreases significantly.

Evidently, sport performance analytics is frequently discussed and described in scientific articles. However, the least number of articles and significant difference from other keywords is in the frequency of use of the term "coaching monitoring". The term "monitoring" is rarely used in articles related to coaching activities, as indicated by Mallett & Côté (2006), stating that the evaluation and supervision of coaches' actions are seldom discussed.

Upon reviewing the studies, 10 articles published in the last decade were identified, which reveal the essence and development tendencies of monitoring in relation to sports. These articles were thoroughly examined to identify and compare the essence and development tendencies of sport monitoring in various publications.



<b>Literature Search</b> Databases: Science Direct (SD); Google Scholar (GS) Inclusion criteria: research articles; published in 2014-2024; articles in English (ENG) only	
1. No. of records identified through the search "monitoring" (SD) n=212 100	1. No. of records identified through the search "monitoring" (GS) n=185 000
2. No. of records identified through the search "sport monitoring" (SD) n=751	2. No. of records identified through the search "sport monitoring" (GS) n=181
3. No. of records identified through the search "performance monitoring" (SD) n=41 890	3. No. of records identified through the search "performance monitoring" (GS) n=8 580
4. No. of records identified through the search "coaching monitoring" (SD) n=254	4. No. of records identified through the search "coaching monitoring" (GS) n=92

*Figure 1 The Process of Systematic Search (by the Authors)*

In the first selected article (Frost et al., 2023), it is indicated that implementing a tool for monitoring the mental state of elite-level coaches would help identify elevated stress levels early and prevent the development of illnesses. The essence of monitoring was described as a "tool that identifies early" and "allows intervention". While studying the use of POLAR M400 sports watches in team sports games, authors (Makar et al., 2023) point out the essence of monitoring in the field of quantifying the training process. The data obtained with the heart rate monitor help to obtain quantitative indicators to assess the impact of the training process on player performance.

**Table 1 The Essence of Sport Monitoring and Development Tendencies Explained in the Reviewed Publications (by the Authors)**

<b>Author/s, Year</b>	<b>The Meaning of Sport Monitoring and Development Tendencies</b>	<b>Selected Monitoring System Components</b>
(Frost et al., 2023)	“Academics and representatives of the sports industry would benefit from a tool that identifies signs of psychological stress and mental illness among elite-level coaches. Such a tool would help identify early and intervene before the development of mental illness or the onset of a mental crisis.”	<i>Tool that identifies signs</i>  <i>Identify early</i>  <i>Intervene before</i>
(Makar et al., 2023)	One of the main reasons for movement demand monitoring is to quantify and select the training process's impact results on player performance...	<i>To quantify</i>  <i>Impact results on performance</i>
(Miles et al., 2019)	“... the majority of the sleep monitoring conducted is through self-reported sleep diaries, with minimal use of validated questionnaires or objective assessments. Limited objective sleep monitoring is not unsurprising, as there can be difficulties accessing required equipment, users need specific skills to ensure effective use, and it can be impractical when trying to implement with large groups of athletes.”	<i>Self-reported diaries</i>  <i>Limited Objective assessment</i>  <i>Specific skills</i> <i>Impractical with large groups of athletes</i>
(Youssef et al., 2023)	"In this work, we develop techniques based on learning models to draw conclusions about exercise recognition and identification, forecasting subject biometrics, exercise assessment, and simultaneous recognition and assessment.”	<i>To draw conclusions</i> <i>Recognition and identification</i>  <i>Forecasting subject biometrics</i>
(Chang et al., 2017)	"The results of this study indicate that main coaches and fitness trainers need to be encouraged to monitor athletes' stress levels during training in order to maximize the benefits of the training process."	<i>To maximize the benefits of the training process</i>
(Essaoudi et al., 2015)	“This cross-sectional, descriptive and qualitative research had a threefold purpose: 1) to identify and describe different effective professional tasks and duties of the "expert" inspector of education; 2) contribute to the development of a competency framework of the inspector; 3) deduce the real training needs of inspectors.”	<i>Identify and describe</i>  <i>Contribute to development</i>  <i>Deduce needs</i>
(Malone et al., 2018)	“The results suggest that systematic monitoring of player well-being within soccer cohorts can provide coaches with information about the training output that can be expected from individual players during a training session.”	<i>Provide with information about the training output</i>

Author/s, Year	The Meaning of Sport Monitoring and Development Tendencies	Selected Monitoring System Components
(Albert & Arnrich, 2024)	“This paper proposes a computer vision method to continuously monitor fatigue during resistance training by predicting external and internal parameters, namely the generated power and the rating of perceived exertion.”	<i>Continuously predicting external and internal parameters</i>
(Fasey et al., 2022)	<p>“A continual awareness, evaluation and monitoring of a range of concurrent changes was therefore central to the ability of an organization to successfully and sustainably deal with those changes.”</p> <p>“Interpretation and evaluation of information is not a linear, temporal response to significant change, but instead is continuous and iterative, also acting as a form of feedback to evaluate and monitor the outcomes of actions taken in anticipation of or in response to significant change.”</p> <p>“Given the ongoing and iterative nature of significant organizational changes, these processes are not sequential or temporally distinct, but instead cumulatively contribute towards the capability of an organization to deal successfully with the multiplicity of changes faced at any one time.”</p>	<p><i>Continual awareness to deal with changes</i></p> <p><i>Continuous and iterative form of feedback</i></p> <p><i>Cumulatively contribute to deal with the multiplicity of changes</i></p>
(Guo et al., 2020)	“In this work, we propose FitCoach, an integrated mobile solution that can conduct systematic fitness monitoring and provide performance review based on a single off-the-shelf wearable device (e.g., wrist-worn wearables or arm-mounted smartphones).”	<i>Systematic performance review</i>

One significant influencing factor on the performance of athletes in team sports games is the quality of the recovery process, and one of the most important ways for athletes to recover is during sleep (Miles et al., 2019). Author Kathleen Miles indicates that adhering to selected "criteria" is essential for sleep monitoring, and athletes often struggle with self-reflection on the quality of their sleep. The lack of knowledge about sleep quality is identified as a problem, and the introduction of a monitoring tool can be particularly effective in working with team sports athletes.

Several publications that were examined in-depth (Essaoudi et al., 2015; Albert & Arnrich, 2024; Fasey et al., 2022) provide a consistent explanation of the essence of monitoring as a "continuous and iterative process". This can be

explained by the essence of monitoring as a continuous systematic process of performance observation, accumulating data based on selected criteria.

The selected articles on the essence and functions of monitoring in the field of sports indicate the essence of monitoring as a continuous systematic data collection process, helping involved parties to make fact-based decisions promptly and to document changes over time to forecast further development dynamics.

### **Discussion and conclusions**

In the conducted study, examining scientific articles published in the last decade allowed to observe that the term "monitoring" is often used in publications related to management processes in the sport environment. In the rapidly evolving modern sport environment, with equally accessible information and financial resources, the effectiveness of the training process and its compliance with specific environmental conditions are considered significant. This directly explains the broad significance of the term "monitoring" in the field of sport performance analytics.

Sport monitoring is primarily examined in relation to athlete and team performance analytics. Monitoring in sports is most commonly used for athlete performance analytics, monitoring the effects of training on physical performance, and predicting trends in the development dynamics. Equally important is the continuous and systematic observation of the actions of the coaches to provide necessary feedback on the development directions and to assist coaches and stakeholders in effective, good coaching practices. The study results are similar to previous research conclusions that coaching evaluation is under research (Mallett & Côté, 2006). Our study is also in line with research and supports further research in coaching monitoring (Sands et al., 2017), because well-organised and managed training process with effective timeliness feedback is crucial for improving athlete performance over time.

The essence and functions of sport monitoring were examined in selected studies published in the last decade and available in the electronic databases Science Direct and Google Scholar. The unifying description of the essence of sport monitoring in the selected publications is that its essence lies in continuous systematic monitoring, using specific criteria in the management process which can contribute to the decision-making process for involved stakeholders.

The functions of sport monitoring include quantifying actions, cumulative data collection to provide immediate feedback for making necessary corrections, or monitoring the degree of achievement of a set performance criteria. To further promote overall improvements in sport performance, it would be essential to focus on monitoring coaches' actions.

The existing study has shown that while determining factors influencing athlete performance and action monitoring have been extensively studied, less attention has been paid to monitoring coaches' actions. Similarly, the inclusion of studies in scientific literature on the importance of expert-level sports coaches' self-reflection skills, the type and timeliness of feedback, and the often observed negative, potentially abusive behaviour of coaches, confirms the significant need for further development of sports coaches' action monitoring systems to provide coaches with immediate and precise feedback on their actions.

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# THEORETICAL AND METHODOLOGICAL FOUNDATIONS OF OPTIMIZATION OF THE TRAINING PROCESS AND STRATEGIES FOR TRAINING STUDENT-ATHLETES OF HIGH QUALIFICATION IN TEAM SPORTS

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**Abstract.** *The article discloses the main theoretical and methodological foundations of optimization of the training process and strategies for training student-athletes of high qualification in team sports. Team sports are particularly popular in Olympic and professional sports. The modern system of sports training is characterized by progressive principles, a wide range of interdependent tasks, scientifically based selection of means and methods, promising long-term planning, high organization of control, provision of hygienic conditions, etc. The purpose is to substantiate and experimentally test the theoretical and methodological foundations of optimizing the training process and the strategy of training student-athletes of high qualification in team sports on the basis of theoretical and practical analysis of the problem under study; to develop the content of the training process of student-athletes of high qualification in team sports. To achieve the goals, the following methods are used: verbal, visual and practical. These methods are most often used to optimize the training process and training strategy for highly qualified student-athletes in team sports. Also, we describe the methods of optimizing the training process and strategies for training student-athletes of high qualification in team sports, which are divided into general pedagogical, specific, additional methods that are specially developed for the needs of sports practice and optimization of the training process. The content of the training process of student-athletes of high qualification in game sports has been developed, which allows purposeful planning and adjustment of tactics and strategy of training student-athletes in team sports on an objective basis, can be used in higher educational institutions that train student-athletes, and can also be concluded in textbooks and methodological recommendations.*

**Keywords:** *game sports, higher education institutions, student-athletes, training process.*

## **Introduction**

**Relevance of the study.** The modern system of sports training is characterized by progressive principles, principles and a wide range of interdependent tasks, scientifically based selection of means and methods, promising long-term planning, high organization of control, provision of hygienic conditions, etc. Sports training of student-athletes should fully reflect the very process of sports training, which is characterized by goals, objectives, means, methods, principles, sides and directions sports training, as well as the structure of the training process.

The creation of conditions for the development and improvement of individual abilities is regulated by official program documents: "On Amendments to the Law of Ukraine "On Physical Culture and Sports" regarding the activities of the Sports Student Union of Ukraine and the Ukrainian Federation of Student Sports" (2020), the Law of Ukraine "On Physical Culture and Sports" (2023), "On Approval of the State Target Social Program for the Development of Physical Culture and Sports for the Period up to 2024".

The issues of construction and content of the training process for the training of highly qualified student-athletes in recent years have been at the stage of intensive development, which is associated with the availability of a large amount of information on the use of modern directions of optimization of the system of management and control of the training of student-athletes in countries of the world with a developed system of sports industry. The active development of sports science, the widespread use of modern technologies, the objectification of knowledge, a systematic approach, the achievement of scientific and technological progress create all the prerequisites for further improvement of the training system in domestic sports as a whole.

## **Literature Review**

Fundamental scientific research in the field of Olympic and professional sports (Burla, 2017; Krutsevych, 2005), students' motivation for physical education and the level of physical fitness (Prontenko et al., 2019) convincingly testify that the best results are achieved by teams that, firstly, are staffed with high-class athletes and coaches, secondly, with scientifically based management of training and competitive processes, and thirdly, have a modern material and technical base and the necessary level of financial support.

This statement adequately reflects the formation of the directions of scientific research that have been carried out recently in team sports games, as well as in the field of Olympic and professional sports in general. A significant part of the research is devoted to the theory and methods of training athletes (Kostyukevich, 2014; Shynkaruk, 2013); the theory of sport (Mudryk,



Dobrynskyi & Dedelyuk, 2018); physical training of an athlete (Platonov & Bulatova, 1995); professional orientation of training specialists in physical education (Kostyukevich, 2016; Tymchyshena, 2008; Vilchkovskyy, 2002).

The optimization of the training process and the strategy of training student-athletes of high qualification are based on the general theoretical principles of training in the competitive period and at the stage of direct preparation for participation in the main competitions (Kostyuevych, 2014; 2016). In these structural formations of the macrocycle, the implementation of management functions is significantly related to the control of technical and tactical actions of athletes, the choice of means and methods of their improvement, the assessment and analysis of game situations (Burla, 2017; Keller, 1992; Kostyukevich, 2016; Platonov & Bulatova, 1995; Shynkaruk, 2013).

An important factor in the effective implementation of training process management processes is to ensure the structural relationships of the components of sports training during the period of direct preparation for competitions, with a focus on improving the team level of technical and tactical skills and in competitive microcycles with a focus on correcting the levels of individual and group technical and tactical preparedness.

As a result, the means of sports training, the prerequisites and methods of their implementation, which ensure the effective functioning of the training system, and its modification depending on the goals of operational, current and stage-by-stage management are formed (Tymchyshena, 2008; Vilchkovskyy, 2002).

The process of optimization of the training process and the strategy of training student-athletes of high qualification is based on the systematization and combination into a single set of factors of technical and tactical training, as well as other types of training that ensure effective management of tactical and technical activities of athletes. This, in turn, ensures an increase in the efficiency of the sports training system as a whole (Burla, 2017; Mudryk, Dobrynskyi & Dedelyuk, 2018; Platonov & Bulatova, 1995; Tymchyshena, 2008; Vilchkovskyy, 2002; Shynkaruk, 2013; Prontenko et al., 2019).

Obviously, the variety of team sports games creates certain difficulties in optimizing the training process and the training strategy of highly qualified student-athletes. Most authors agree that methodological approaches should be clearly specified and correspond to the specifics of a particular type of sports games (Vilchkovskyy, 2002; Kostyukevich, 2016). At the same time, it is emphasized that the use of effective methods has the possibility of positive transfer of effective methods from one sport to another, which is a significant reserve for increasing the effectiveness of training aimed at improving the technical and tactical skills of athletes (Burla, 2017; Mudryk, Dobrynskyi & Dedelyuk, 2018; Shynkaruk, 2013).

## Methodology

The methods of sports training should be understood as the ways of work of a coach and an athlete, with the help of which the mastery of knowledge, skills, and abilities is achieved, the necessary qualities are developed, and a worldview is formed. For practical purposes, all methods are conditionally divided into three groups: verbal, visual, and practical. In the process of sports training, all these methods are used in various combinations. Each method is not used in a standard way but is constantly adapted to the specific requirements due to the peculiarities of sports training. In the process of selecting methods, it is necessary to ensure that they clearly correspond to the tasks, general didactic principles, as well as special principles of sports training, age and gender characteristics of student-athletes, their qualifications, and preparedness. In sports, where special attention is paid to the connection with practice, as well as due to the specific features of sports activities, the main role is given to practical methods (Mudryk, Dobrynskyi & Dedelyuk, 2018; Tymchyshena, 2008; Vilchkovskyy, 2002; Shynkaruk, 2013).

Verbal methods used in sports training include narration, explanation, lecture, conversation, analysis, and discussion. These forms are most often used in a concise form, especially during the training of qualified athletes, which is facilitated by special terminology, a combination of verbal methods with visual ones. The effectiveness of the training process largely depends on the skillful use of orders and commands, remarks, verbal assessments and explanations (Burla, 2017; Prontenko et al., 2019).

Visual methods used in practice are diverse and to a greater extent determine the effectiveness of training processes. First of all, it is necessary to include the methodically correct display of individual exercises and their elements, which is carried out by a coach or a qualified athlete (Vilchkovskyy, 2002; Kostyukevich, 2016).

In sports practice, the means of demonstration are widely used – educational films, videotape recordings, models of 30 playgrounds and fields for demonstrating tactical schemes, and e-books. The orientation method is also often used. It is necessary to distinguish between both the simplest landmarks that limit the direction of movement, the distance traveled, etc., and the more complex ones – light, sound, and mechanical conductive equipment. This equipment allows the student-athlete to obtain information about tempo rhythms, spatial characteristics of movement, and sometimes provides not only information about the movement, their results, but forced correction (Kostyukevich, 2014; Tymchyshena, 2008; Vilchkovskyy, 2002).

Methods of sports training are divided into general pedagogical, specific, additional methods that are specially developed for the needs of training and sports practice.

*General pedagogical methods* are aimed at mastering knowledge. They are

divided into methods that provide:

- sensory transmission and assimilation of information (natural display, demonstration, etc.);
- printed transmission, assimilation, and reproduction of information (work with documentary information);
- oral transmission, assimilation, and reproduction of information (lecture, story, explanation, etc.) (Kostyuevych, 2014; 2016).

*Specific methods* are used for the purpose of mastering motor skills and abilities, as well as for improving motor skills and developing physical qualities.

To master motor skills and abilities, methods are used that involve the formation of a holistic motor skill (holistic exercises), as well as methods that provide for the formation of an integral motor skill in parts with their subsequent connection into one whole (dissected exercises).

To improve motor skills and develop physical qualities, methods are used that provide for accurate rationing and regulation of the load during the exercise: uniform, alternating, repeated, interval, circuit training.

For the same purpose, game and competitive methods are used, which involve the creation of game and competitive circumstances in the process of performing the task (Platonov & Bulatova, 1995; Shynkaruk, 2013).

*Additional methods* are specially developed in relation to the needs of training and sports practice. They are autogenic training, psychomotor training, training in extreme conditions, etc.

## **Research results**

The training of student-athletes in team sports teams is one of the main areas of physical education. Recently, in the scientific and methodological literature, the problem of training athletes in team sports in higher education institutions has been widely discussed and has become relevant.

The coach of the student team is faced with the main problem: how to properly approach the construction of the educational and training process in the conditions of a higher education institution, which would allow the team to achieve maximum sports results. Today, it is possible to achieve great success in team games only through the intensification of sports training. The process of intensification of sports training involves four stages: team selection, motivation and mobilization, formation of a training program, and activity implementation of the program (Shynkaruk, 2013).

The training of student-athletes is based on the basic provisions of the modern sports training system. The training process itself is considered in the interdependence of goals and objectives, patterns and principles of sports training, as well as the rational use of means and methods of sports training. Sports training is carried out in separate sections, which have independent features, namely the

sides of training: physical, technical, tactical, theoretical, moral and volitional, and integral (Platonov & Bulatova, 1995).

*Physical training* is aimed at fostering physical abilities (strength, speed-strength, speed, endurance) necessary for sports activities. Physical training is divided into general and special. The tasks of general physical training are the diverse development of physical qualities that are not determined by the specific abilities manifested in the chosen sport. Special physical training solves the problem of fostering specific abilities, thanks to which an athlete excels in his chosen sport. In the process of physical training, athletes increase the level of functional fitness and special training (Burla, 2017).

*Technical training* is aimed at mastering by the athlete the actions that are performed in the competition, as well as with the help of which the athlete participates in the training process. Technical training is carried out in stages, first athletes master the necessary technical skills in the chosen sport, then they are improved and brought to automatism in training sessions and, finally, implemented in the process of competition (Keller, 1992).

*Tactical training* should assist the athlete in the implementation of sportsmanship in a competitive environment. In the process of tactical training, the athlete's ability to conduct a sports struggle is formed, taking into account his preparedness, the capabilities of the opponent, external conditions, etc.

*Theoretical training* is necessary for an athlete to arm himself with knowledge of the theory and methodology of sports training, the content and patterns of athletes' training, the evolution of the development of the sport, etc.

Achieving a high sports result is impossible without proper psychological training, in the process of which moral and *volitional* qualities, the ability to tune in to sports struggle are brought up and improved. Proper psychological preparation allows you to form special psychological functions in an athlete associated with the peculiarities of competitive activity in the chosen sport (Kostyukevich, 2016).

The essence of *integral training* is the combination of skills and abilities, physical qualities, knowledge, experience, and level of preparedness, which allows to carry out comprehensive (integral) training. Integral training is especially important for highly qualified athletes. Planning the training process of athletes, taking into account individual aspects of training, allows you to more systematically select the means and methods of training, as well as determine the criteria for monitoring the level of athletes' preparedness (Kostyukevich, 2014).

Sports training is carried out on the basis of general pedagogical principles and principles of methods of physical education and sports. The modern system of athletes' training is carried out on the following basic principles based on a scientific and methodological basis:

- focus on the maximum possible achievements;
- in-depth specialization and individualization;

- unity of general and special training;
- continuity of the training process;
- unity of gradualness and maximum increase in training loads;
- undulation of load dynamics.

*Focus on the maximum possible achievements.* This principle most fully reflects the essence of sport – winning the competition. Therefore, it is quite natural for each athlete to try to go as far as possible along the path of improvement, which is stimulated by the very system of sports competitions and a single sports classification (Mudryk, Dobrynskyi & Dedelyuk, 2018).

*In-depth specialization and individualization.* The regularity of modern sports is the impossibility of achieving the maximum possible result without adhering to the principle of in-depth specialization and individualization. The use of this principle is also associated with the natural endowment of a particular athlete, his inclination to a certain specific activity (Shynkaruk, 2013).

*Unity of general and special training.* The interdependence of general and special training is due to the inseparability and unconditional necessity of each of the aspects of sports training. Special training is based on general training, that is, the content of special training depends on the prerequisites created by general training, and the content of general training is determined by the features of sports specialization (Tymchyshena, 2008).

*Continuity of the training process.* The main essence of this principle is that sports training is built as a year-round and perennial training system. The connection between the links of the training process is provided by a continuous sequence of urgent delayed and cumulative effects of training. The interval between classes is determined on the basis of the patterns of recovery and improvement of performance (Vilchkovskyy, 2002).

*Unity of gradualness and maximum increase in training loads.* The principle reflects the patterns of adaptation to training and competitive loads. In the process of long-term training, the athlete is presented with higher requirements at each subsequent stage (Platonov & Bulatova 1995).

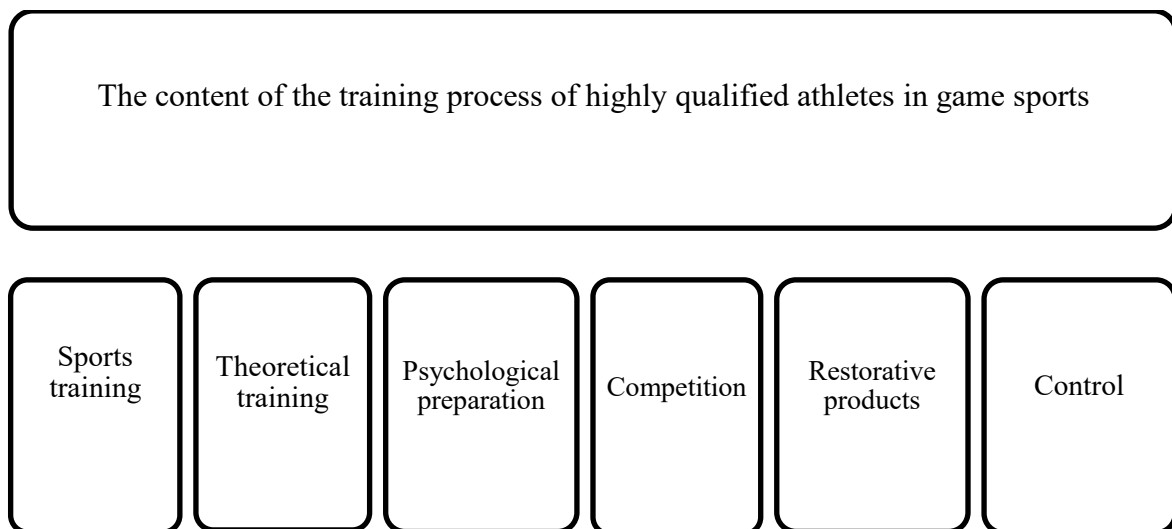
*Undulation of load dynamics.* The principle is due to the need for rest after exertion. A progressive increase in load at certain stages comes into a certain contradiction with changes in the body, which are caused by the processes of adaptation to loads and the need for rest and biological rearrangement of the body.

As a result of the study of scientific and pedagogical literature and the analysis of the methodology of the training process of student-athletes in team sports, we have developed the content of the training process of highly qualified athletes in team sports, presented in Figure 1.

The content of the training process includes sports training, which consists of physical, technical, tactical, and game training, as well as theoretical training (the basics of sports theory, patterns of sports training), psychological training (formation of motivation for sports, volitional training, ideomotor training,

regulation of mental tension, management of starting states, improvement of response and tolerance to emotional stress), competitions (preparatory, control, leading, selection, basic), restorative means (pedagogical, medical and biological, psychological), control (in-depth, stage, current, operational).

The implementation of the content of the training process and the strategy of training student-athletes of high qualification in team sports solve, on the one hand, the problem of improving the qualities of special physical training of student-athletes and their technical and tactical skills and, on the other hand, the task of direct preparation for competitive activities. In this regard, game training acts as a kind of synthesis of past training work and a forecast of future competitive activity, and the main means of game training are primarily a variety of game training tasks and physical exercises, which are presented in Figure 1.



*Figure 1 The content of the training process of highly qualified athletes in team sports (created by the author)*

## **Conclusions and discussion**

Thus, on the basis of theoretical and practical analysis of the problem under study, we substantiated and experimentally tested the theoretical and methodological foundations of optimizing the training process and the strategy of training student-athletes of high qualification in team sports. To optimize the training process and the strategy of training student-athletes of high qualification in team sports, we used the following methods: verbal, visual, and practical. Also, we substantiate the use of the following methods of sports training: general pedagogical, specific, and additional methods that are specially developed for the needs of sports practice.

The content of the training process of highly qualified athletes in team sports has been developed, which allows purposeful planning and adjustment of tactics and strategy for training student-athletes in team sports on an objective basis, can

be used in higher educational institutions that train student-athletes, and can also be concluded in textbooks and methodological recommendations.

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