

TECHNOLOGIES FOR DEVELOPING THE CREATIVE POTENTIAL OF FUTURE VOCATIONAL TRAINING TEACHERS

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Abstract. *The article examines the important aspect of training future teachers of professional education, namely applying technologies to stimulate and develop their creative potential. The formation and development of the creative potential of an individual is of great importance in the context of the educational process and the formation of the future teacher, since modern society has set high demands on specialists regarding their professional qualities. Applying the technologies for developing student's creativity is a key element of the modern educational process aimed at stimulating creative thinking and personal development of the future specialist. The article explores current challenges associated with preparing future professional education educators for the implementation of educational technologies that stimulate the unfolding of learners' creative potential. The materials of this study focus on the issue of technologizing the educational process in higher education institutions, which will contribute to its qualitative improvement, wider adoption of innovative approaches, modern development tools, teaching methods, and forms that will ensure the development of learners' creative abilities. The concept of pedagogical technology is examined, its essence and classification are revealed, and aspects of implementing a technological approach in the educational process of preparing future professional education educators are highlighted. The results of the experimental research presented in the article emphasize the importance of using modern pedagogical technologies and draw attention to the need to search for rational ways of teaching, develop modern principles, and justify the specifics of their implementation that meet the requirements for education aimed at shaping and developing the creative personality of the future professional. The article highlights the practical experience of implementing educational technologies in the institutions of higher education and defines the effective methods of evaluating and supporting the creative potential of students. The key aspects that contribute to the improvement of the professional development of future specialists and the*

creation of conditions for their creative self-expression in the educational process and the further professional activities were considered.

Keywords: *creativity, creative abilities, creative potential, educational technologies, personality, technologies, vocational training teacher.*

Introduction

Modern society makes new demands on the higher education system. At the time of graduation, students must not only possess knowledge, but also be capable of active, independent activity, cooperation, and be ready to flexibly adapt to social changes. In this regard, one of the priority tasks of developing the modern educational process is forming the active personality capable of productive decisions. In higher education institutions (HEIs) of Ukraine, the problem of applying technologies that ensure forming and developing the creative potential of students has become relevant.

Optimization of the education system in Ukraine aimed at its integrating into the European educational space is impossible without stimulation and activation of the student's creative abilities as a guarantee of the personal self-development and professional self-realization. The degree of implementation of the technological approach is one of the key criteria that guarantees the systematicity, purposefulness, efficiency and effectiveness of the activity of higher education institutions. Due to the implementation of technologies in the field of education, the interest of students in learning increases, it becomes possible to establish the connection between the educational material and real life, the necessary professional competences are formed, and personally oriented and differentiated approaches to the process of forming the creative potential of the student are implemented.

Modern technologies make the necessary toolkit of the educational process of higher educational institutions of the pedagogical profile. They contain the powerful prospect of improving the quality of the professional skills, revealing creative abilities and creativity of future teachers of the professional education during university training. Creative activity organized by the means of the pedagogical technologies forms the personality of the students, helps them to reveal their knowledge, abilities, skills and abilities, ensuring the development of the creative potential.

The purpose of the article is to generalize the theoretical information about the main content of the concept of technology and its implementation in the educational process of the higher education for the development of creative potential in training future teachers of vocational training.

The research applies the theoretical, empirical, and mathematical and statistical methods of processing the empirical data.

Literature review

The analysis of the scientific research and literary sources made it possible to determine that the problem of the creative potential of the personality, the impact of applying creativity development technologies on the educational process was investigated by many scientists. Thus, the origins of the study of technology in education can be found in the works of Ya.-A. Comensky (Komensky, 1940), B. Skinner (Skinner, 1968), B. Bloom (Bloom, 1956). The implementation of modern pedagogical technologies in the educational process was studied in the researches of P. Sikorskyi (Sikorskyi, 2021) O. Antonova (Antonova, 2015), O. Yankovych (Yankovych, Bednarek, Andzheyevska, 2015), O. Baranovska (Baranovska, Kosianchuk, Trubachova, Chornous, 2018), V. Starosta, (Starosta, 2019), O. Budnyk (Budnyk, Nikolaiesku, 2022), V. Kovalchuk (Kovalchuk, 2017, 2018, 2021, 2022), H. Vaskivska (Vaskivska, 2018), B. Vovk (Vovk, Matviienko, 2020) and others define the main methodical requirements that must be met by the technologies of modern education. However, despite the significant amount of the research, the problem of applying technologies for developing the creative potential of the future teachers of professional education requires the more thorough study.

Theoretical grounding the problem

Modern requirements for the professional training of future teachers of professional education require the need to make changes in this process. These changes are connected with the fact that nowadays not only in-depth knowledge is required from the future specialists, but also the ability for constant learning and creative self-development. Considering this, there is a need to find new forms, methods and technologies of learning that will allow future teachers of vocational training to acquire the necessary competencies for the development and realization of their own creative potential while performing the educational and professional activities. In the holistic educational process, forming and developing the creative abilities of students takes place with the help of technologies.

The word “technology” comes from the fusion of two Greek words *techne* – art and *logos* – skill, teaching. Learning technologies have been used in education since the ancient world, long before the term “technology” was introduced into circulation. One of the first to understand that education can be organized using certain methods and techniques was Ya.-A. Komensky (Komensky, 1940). He suggested using interactive and problem-based learning methods, which became the basis for the development of interactive and project technologies. In the 1930s, a new stage of the development related to the use of technical means in education began in pedagogy. This stage was called “technization” and marked the

beginning of the first period of development of world-class educational technologies. In the second half of the 20th century, there was an awareness in pedagogy that technology is not just a means of learning, but also has an impact on its content and methods. This led to the change of the term “technology in education” to “educational technology”. Thus, the American scientists B. Skinner (Skinner, 1968) and B. Bloom (Bloom, 1956) believed that traditional teaching does not ensure effective achievement of the educational goals. In their opinion, the educational process should be more targeted and effective. They suggested setting concrete, measurable tasks before training, which would allow to assess the success of their achievement.

Later, the term “educational technologies” began to be understood as a set of methods, means and forms of organization of the educational process aimed at achieving the specific educational goals. The end of the 20th century was marked in education by the technological revolution associated with the wide implementation of information and communication technologies (ICT). These technologies made distance learning possible, which has become one of the most common forms of education in the modern world (Yankovych, Bednarek, Andzheyevska, 2015).

Educational technologies make a broad concept that includes didactic technologies, educational technologies, digital technologies, etc. In modern conditions, when the content of the education is updated, it is especially important to systematically work on improving the professional competence of teachers and introducing modern technologies into the educational process, which contribute to the development of the creative potential of students. In higher education institutions, in training future teachers of the vocational education, an important place is given to the interrelationship of various educational technologies with the aim of revealing their creativity, originality, which is the key to the further professional self-realization. Thus, didactic technology in modern professional education is not just a set of methods and means of learning, but a complete system that covers all the stages from setting goals to organizing and conducting classes. It is aimed at the effective development of future specialists and is a flexible educational model that allows adapting to different conditions. Nowadays, various didactic technologies aimed at developing creativity, critical thinking of the future teacher of the vocational education are widely used in higher education institutions. Among them, the most popular are interactive, game, project technologies, as well as technologies of cases, problem-based learning, etc.

In modern classes, interactive learning is gaining more and more popularity, which has a number of advantages compared to the traditional one, ensuring the active participation of students in the educational process, involving in the individual, pair, group activities, applying tasks of the creative nature (Starosta, 2019). The most common methods of implementing interactive technologies aimed at developing the creative potential in training future teachers of vocational

education include “Aquarium”, “Brainstorming”, “Microphone”, “Journalist”, “Unfinished sentences”, etc.

Game technologies are among the oldest and most effective educational technologies. They represent a large group of methods and techniques that are implemented with the help of various pedagogical games. A game is an activity that can last from a few minutes to an hour or more and is used both in the classroom and in extracurricular activities. The choice of the type of game depends on the specific goals and educational tasks (Kovalchuk, 2017). In higher education institutions while training future teachers game technologies serve as a method of learning that uses games to achieve the educational goals, in particular with the aim of developing the creative potential of students.

In modern conditions, project technology is successfully and actively developing, as it meets the modern requirements of education. This technology involves the active participation of students in the process of assimilation of knowledge through the non-standard, creative approach to the practical solution of tasks – projects. While training future teachers of vocational education, project technology has a number of advantages over the traditional training: it improves knowledge assimilation; forms teamwork and communication skills, develops creative abilities and critical thinking skills. Participation in projects helps students of higher education institutions to become more competitive and successful in life.

The technology of problem-based learning which involves the creation of problem situations that encourage learners to independently search for knowledge and solve educational tasks through the non-standard approach, occupies an important place among the educational technologies in the higher education institutions. An important factor in the successful application of problem-based learning is the creative approach of the teachers themselves. As H. Radchuk notes, they should be able to create conditions for creative self-expression of students, help them find new ideas and solutions, develop their critical thinking, believe in their capabilities (Radchuk, 2014). Nowadays, problem-based learning is an effective didactic technology that contributes to the development of thinking, creativity and independence of future teachers of the vocational education.

In the higher education institutions of Ukraine, there is a growing interest in innovative learning technologies, in particular, in case technology. It involves consideration of real problem situations that require the application of knowledge and skills to solve them. When training future teachers of vocational education, the use of this technology makes the educational process more effective and interesting, contributing to the deepening of the theoretical knowledge, the acquisition of the practical skills, the development of creativity and creative potential.

An important component of the modern educational process is made by the educational technologies that are directly aimed at the comprehensive

development of the students' personality, the formation of their value orientations and social skills. Educational technologies are implemented in various forms, in particular, through participation in cultural and mass events, which allows students' developing creative abilities, forming communication and cooperation skills; participating in students self-government which is the key to the development of leadership qualities, decision-making skills and responsibility (Vovk, Matviyenko, 2020). Based on the research of the scientists, educational technologies that have the greatest impact on developing the creativity of future teachers of the professional education include personally oriented education, collective creative education technology, "creating the situation of success" technology, students team formation technology, show technologies, etc. Applying these technologies is directly related to all the didactic technologies, which contributes to the better disclosure of the creative personality of the future specialist.

Among the educational technologies, the modern world has given an important place to digital technologies. They have become necessary not only for higher education, but also for various spheres of life, for the successful professional activity. The accelerated development of digital technologies is taking place and is being implemented in the educational process. An important aspect of the digital transformation of education is the use of computer software in the study of all disciplines. This makes learning more effective and interesting, and also contributes to the formation of the digital culture and the development of the search for creative solutions when performing tasks (Budnyk, Nikolaiesku, 2022).

So, based on the above mentioned, it is worth emphasizing that the educational technologies, characterized by innovation, integration, and diversification, are an important tool that makes the process of training future teachers of professional education in the higher education more effective and relevant for the modern world. They contribute to the improvement of the quality of education, the development of the key competencies of the students and their successful creative professional activity in the future.

Research methodology

To determine the influence of the educational technologies on the development of the creative potential of future teachers of vocational training, the study was conducted on the basis of Oleksandr Dovzhenko Hlukhiv National Pedagogical University and Volodymyr Hnatyuk Ternopil National Pedagogical University. The study included applying the following methodical tools: comparative method of research organization; stating and forming experiments, questionnaires, testing, observation, conversation, analysis; quantitative and qualitative data analysis, as well as methods of the mathematical statistics, such

as descriptive statistics, correlation analysis, Student's test and Fisher's test (Romakin, 2006; Shevenko, 2016). As the main means of diagnosis, the following methods of evaluating the motivational component of H. Kostyuk (Kostyuk, 1989), the self-actualization test and the interpersonal diagnosis method (Shevenko, 2016) were used. E. Torrance's tests (Torrance, 1974) were used to diagnose the creative potential in the conditions of the higher education. The method of self-assessment of creative abilities, developed on the basis of D. Johnson's methodology, was used to assess the creative abilities (Johnson, 2003) etc.

Research results

Within the framework of the research problem, the following components of the students' creative abilities were distinguished: motivational (motives reflecting conscious motivations for activity; the individual's focus on creative assimilation and application of knowledge, the formation of creative skills and the development of abilities), cognitive (knowledge in the field of solving creative tasks and creating projects), operational (skills in solving creative tasks and implementing projects); creative (creative abilities necessary for solving creative tasks).

Based on the selected components, the special diagnostic map of the process of developing students' creative potential was developed which contained the levels of development of the specified components (high, medium, low). This diagnostic map made it possible to carry out the diagnostics and pedagogical correction of the components of creative abilities of future teachers of vocational training in the pedagogical experiment.

Table 1 Analysis of levels of creativity components development before the experiment (vreated by authors)

Development components	Experimental group			Control group		
	high	medium	low	high	medium	low
motivational	18 (29,03%)	21 (33,87%)	23 (37,1%)	20 (32,26%)	19 (30,65%)	23 (37,1%)
cognitive	13 (20,97%)	24 (38,71%)	25 (40,32%)	15 (24,19%)	28 (45,16%)	19 (30,65%)
activity	15 (24,19%)	23 (37,1%)	24 (38,71%)	22 (35,48%)	20 (32,26%)	20 (32,26%)
creative	14 (22,58%)	26 (41,94%)	22 (35,48%)	12 (19,35%)	29 (46,77%)	21 (33,87%)

In total, 62 third-year students were involved in the experiment: control group – 30 participants, experimental group – 32 participants. The stating stage

of the experiment was aimed at diagnosing the initial level of creative capabilities of the respondents. Diagnosis of the initial level of creativity was carried out using the above-mentioned methods based on the developed diagnostic map.

It can be seen from Table 1 that before the forming experiment, the control and experimental groups did not significantly differ from each other in terms of the level of development of creative potential. However, it is worth noting the dominance of medium and low levels.

At the forming stage, purposeful organization of the research and experimental work was carried out to test the created technology for developing the creative potential of future teachers of vocational training. The control group studied the programme material in the traditional form. In the experimental group, the educational process took place according to the methodics developed by us, which included the educational activities by way of applying the set of the educational technologies that contribute to the development of creativity and the creative potential of students: problem situations, project work, defending creative tasks, organization of business and role-playing games, the use of heuristic methods, organization of collective and individual creative activity, reflection, etc. Educational technologies and digital technologies, including text, graphic editors, presentation editors, modelling programmes, Internet technologies, etc., were used in close connection. They solve didactic tasks of creative classes and differ from standard ones, requiring constructive motivation, intellectual activity of students, avoiding stereotypes, flexibility of thinking, imagination, etc. At the end of the forming stage of the pedagogical experiment, the re-diagnosis of the level of development of the creative potential of future teachers of the professional education was carried out.

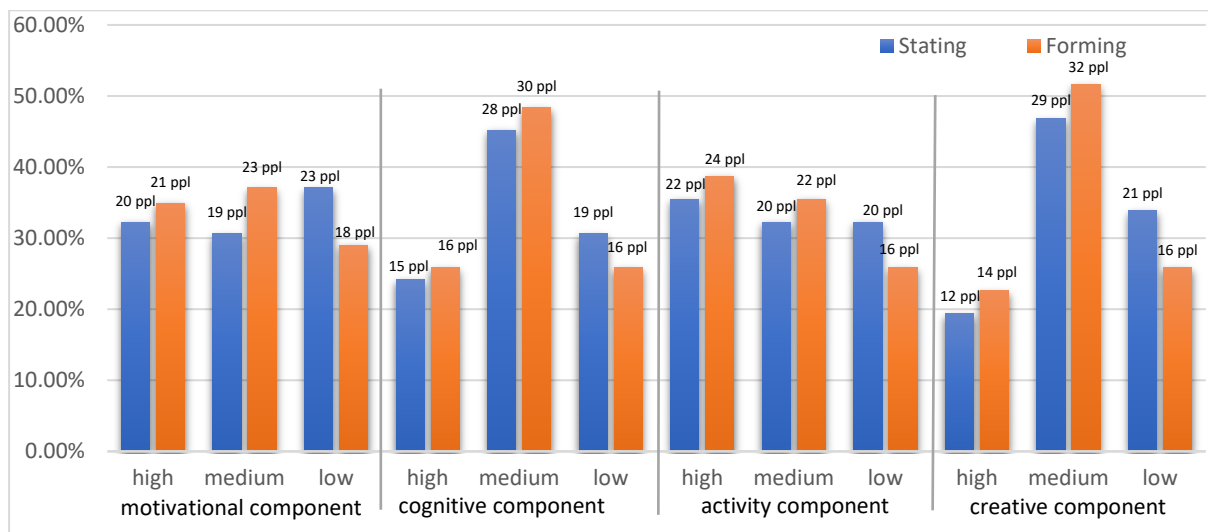


Figure 1 Analysis of levels of development of creativity components in the control group after the experiment (created by authors)

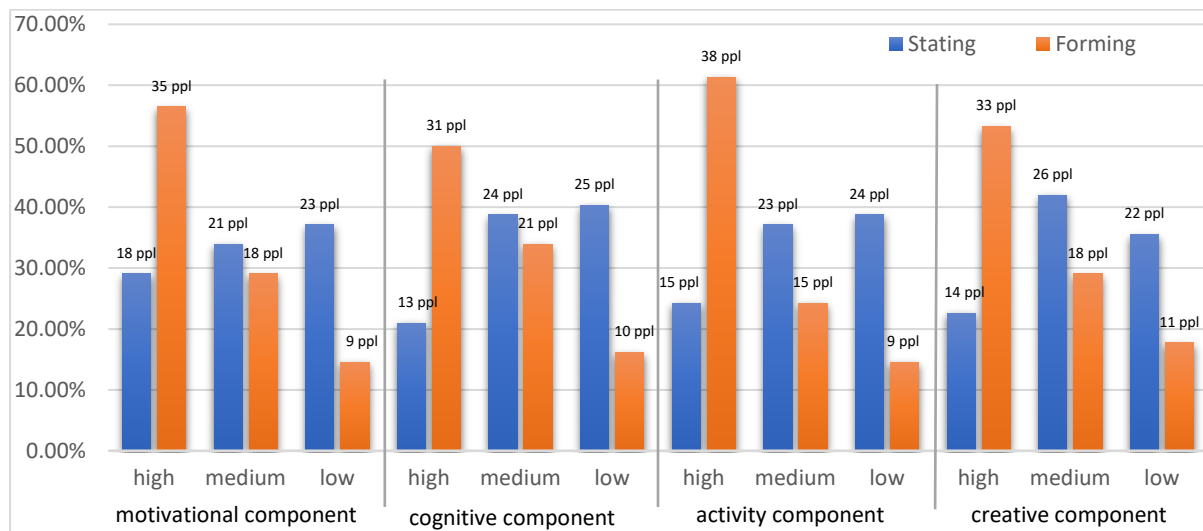


Figure 2 Analysis of levels of development of creativity components in the experimental group after the experiment (created by authors)

At the end of the experiment, the analysis of changes in the experimental and control groups was carried out. Based on the methods of E. Shostrom, T. Leary, E. Torrens, D. Johnson, H. Kostyuk, J. Gilford, and others, in order to determine the level of changes caused by the developed by us methodics. Based on the obtained data (shown in Figure 1 and 2), the results of the control and experimental groups were compared before the beginning and after the end of the experiment.

Diagram 1 shows unchanged significantly indicators in the levels of development of the creative potential of the control group. The analysis of the data in Diagram 2 shows that the following changes were observed in the experimental group: – the dynamic of the high level growth by 27.42% and the decrease of the low level to 14.52% from 37.1 was recorded for the motivational component; – according to the cognitive component, 50.0% of respondents reached the high level and the number of students with the low level of creative abilities decreased by 24.19%; – according to the activity component, the number of students with the high level increased by 37.5% and with the low level decreased from 38.71% to 14.52%; – according to the creative component, there was an increase in the number of students with the high level by 29.65%, the decrease in the number of students with the medium level by 12.91% and with the low level by 17.74%.

Thus, the conducted experiment confirmed the suggested hypothesis that the educational process in the higher education institutions organized on the basis of applying educational technologies for developing the creative potential is effective, contributing to the increase in the level of creativity and creative capabilities of future teachers of vocational training, which is a guarantee of their

professional self-realization and, as a result, the formation of the competitive specialist in demand at the labour market.

Conclusions

In the modern educational environment training future teachers for effective work in conditions of rapid changes is an important task. Technologies for developing the creative potential are becoming a key tool for achieving this goal. Educational technologies encompass a set of methods, techniques, and tools that assist educators in making their work more effective and learning more engaging and productive for learners. The integration of various technologies during education in higher education pedagogical institutions contributes to the development of competencies necessary for successful future professional activity. The research focused on the study of the effectiveness of applying educational technologies in the process of training future teachers of professional education. For developing the creative potential, we consider the most effective to be interactive, game, project technologies, case technologies, problem-based learning, personally-oriented technologies, the technology of “creating a situation of success”, show technologies, etc., which are used in close interaction with the modern digital technologies.

The results of the study confirmed that applying technologies for developing the creative potential helps to increase the professional competence of future teachers. Students who participated in the pedagogical experiment showed the higher level of creativity and innovative thinking. Therefore, our results indicate the need to introduce technologies for developing creative potential into pedagogical practice. This will help to ensure quality training of future teachers for modern challenges and ensure their successful professional activity in the future.

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