

THE DEVELOPMENT OF MUSICAL INTELLIGENCE IN JUNIOR SCHOOLCHILDREN DURING THE LESSONS OF THE ARTISTIC CYCLE

Natalia Lazarenko

Vinnitsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine

Liudmyla Brovchak

Vinnitsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine

Lesia Starovoit

Vinnitsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine

Abstract. *The relevance of the research is due to the necessity of implementation of the person-oriented approach into the educational process with the aim to provide the development of musical intelligence in junior schoolchildren on the basis of determining their individual peculiarities, forming their cognitive and communicative skills. Due to this, basic approaches to understanding and interpretation of the notion “intelligence” have been analyzed; scientific researches concerning the issue of the development of musical intelligence of children have been processed. The aim and objectives of the article, which consist in processing the dynamics of the development of musical intelligence of children in the process of artistic activities, have been set. Pedagogical conditions of the development of musical intelligence of children during the process of artistic activity have been singled out, the dynamics of the development of musical intelligence during the lessons of artistic cycle has been discovered in junior preschoolers with the help of testing and musical and creativity activities, degrees of studied qualities development have been compared in children of control and experimental groups, results of summative and final tests have been compared. It has been established, that without observance of special psychological and pedagogical conditions and without purposeful mental impact the development of musical intelligence in junior schoolchildren will have no effect, because changes that occur during the training in accordance with the traditional approach are random in most cases and cannot guarantee the effectiveness of children`s development.*

Keywords: *development, intelligence, musical intelligence, junior schoolchildren, lessons of the artistic cycle.*

Introduction

Changes that occur in the modern society determine demands to the person of future – this person is artistic and intellectually advanced. The society requires people with a high level of intelligence, who are able to find unconventional, creative and innovative decisions to solve different challenges.

The upbringing of such an individual, first of all, undertakes the establishment of compulsory education, where principles of person-oriented approach are realized. In Study programs of the primary education, particular attention is drawn to the personal and intellectual development of junior preschoolers. Herewith, the significant role in the educational system is devoted to the formation of universal educational actions, socially meaningful attitude to knowledge and development of cognitive and creative skills and learners' interest.

In the system of school education, primary classes are an important stage in the formation and development of intelligent and creative individuality, because it is in these years the fundament of the intellectual development of schoolchildren are laid. Art and especially music is of significant importance in the formation of musical intelligence of children because the understanding of the meaning of artistic work appears only on the basis of the cognition of its form.

Modern methodological approaches, aimed at the development of intelligence of children, are related to individual and differentiation approaches to primary school children on the lesson of the artistic cycle. Herewith, the significant researches' tasks are the development and the implementation of new and effective training technologies, the detection of principles and approaches of the development of musical intelligence of children, at which the child can develop and perceive the world in those kinds of activities that are close and understandable to her.

The aim of the article – to uncover the state and ways of the musical intelligence development of junior schoolchildren during the lessons of the artistic cycle.

The methodological background is the determination of the essence of the intelligence and its correlation with the person's development in the educational system, orientation on universal human values. In the article, the analysis of the pilot testing of the implementation of the differential approach to the development of musical intelligence of junior schoolchildren during the lessons of the artistic cycle is performed. For the realization of the target aim and solution of the objectives we used the following methods: theoretical (philosophical, psychological and philosophical, scientific-methodological literature analysis; generalization, comparison, systematization); empirical (pedagogical observation, questionnaire, pedagogical experiment). Trial facilities of the research were establishments of general secondary education in Vinnytsia city. The pupils of the 4th form took part in the experiment (162 pupils).

Theoretical background of the research

Studying intelligence as a phenomenon has been the object of interest scientist and philosophers for many centuries (Anaxagoras, Plato, Aristotle, I. Kant, G. Hegel and others). The phenomenon “intelligence” was introduced into psychology at the end of XIX century by English anthropologist F. Galton. Works of foreign researchers of the XX century (D. Wechsler, J.P. Guilford, L. Thurstone and others) and famous national scientists (M. Akimova, A. Luria and others) are devoted to studying of the psychology of abilities, intelligence and creativity.

During the XX century, scientists determined intelligence as the ability to study (C. Spearman, S. Kolvin); the ability to operate with abstractions (L. Termen, D. Peterson); the ability to adapt to new conditions (W. Stern, L. Thurstone). In the 70s of the XX century in the USA was developed the theory of multiple intelligences. Works of R. Vinha, V. Brainin and others authors about the development of musical intelligence of children have the particular importance for our research.

The phenomenon “intelligence” in psychology became the subjects of disputes and critics. Psychologists tried to give the definition of the intelligence and came across a lot of difficulties. As far back as in the 20s of the XX century in the frame of worldwide discussion the appropriate way to measure the intelligence was testing, despite the fact that the determination of the phenomenon of the intelligence appeared to be very contradictive.

Scientist W. Stern implied the intelligence as the general ability to adapt to new living conditions. On the opinion of L. Polani, intelligence is one of the ways to gain knowledge. On the opinion of J. Piaget, acquiring knowledge (assimilation) is only one aspect of the process of applying knowledge in the furtherance of the practical task. In this instance, it is important to note, that the problem should be new or should have a component of novelty. According to J. Piaget, highly developed intelligence must manifest itself in the cross-functional flexibility, in the getting balance of the individual with the environment (Пиаже, 2003).

On the opinion of researcher M. Akimova, the core of the concept, which is under our consideration, is the mental alertness, because self-control assures the definite degree of activity (АКИМОВА, 2005). With this opinion agrees O. Holub, who considers activity and self-control and the fundamental factors of intelligent effectiveness and, moreover, includes to this list efficiency (Голуб, 2000).

Based on the above stated, we can consolidate, that the intelligence – is the ability, that determines the success of a person`s adaptation to new vital conditions. The process of intellectual development finds its reflection in the solution of the problem “in the internal plan of actions” in the case when

consciousness is above unconsciousness. J. Thomson considers the intelligence as an abstract notion, which regulates behavioral characteristics. A. Binet, T. Simon, who designed first intelligence test, considered that the intelligence is peculiar to those “who judges right, understands and thinks, who due to sound mind and leadership is able to adapt to different living conditions. L. Venher supported these views, determining the intelligence as the ability to act with wisdom, to think rationally and easily walk through life circumstances. (Венгер, 2003).

It is important to realize the fact that intelligence involves different cognitive processes, while extremely high levels of skills or abilities cannot be found in all areas of human activity. This fact emphasizes the necessity to encourage the development of skills in those areas where people can show special talent, and also provide them with assistance and support in other areas.

There is a form of intelligence associated with the verbal-auditory channel, this is musical intelligence – the ability of a person to recognize the meaning and significance of rhythmically organized periods and be able to produce them. These skills depend on the verbal and auditory abilities of the individual.

In our research, we rely on works of well-known national educators: A. Makarenko, O. Sukhomlynsky, who pointed out that on the basis of the individual formation of pupils, must be universal human values. To the age peculiarities of junior schoolchildren devoted works of D. Bohoiavlensyi, V. Krutetskyi, A. Leytes and others. Different aspects of the correlation of the intelligence and other cognition process have been uncovered in works of national scientists (B. Ananiev, P. Halperin, O. Nykyforova, A. Zaporozhets). The great contribution in the issue of research of the peculiarities of the educational process of junior schoolchildren has been done by V. Zahviazynskyi, O. Kuzmina and others.

The significant importance for our research has scientific works in musical pedagogy and psychology of O. Antroshchuk L. Barenboima N. Vetluchina T. Zemniak D. Kyrnarska and other authors, who studied the issue of the formation and the development of musical abilities in children. In researches of E. Abdullina L. Aleksieienko, N. Hrodzenska, V. Khrypchenko, L. Shkoliar and others, presented provisions, in which the accent is put on the complex approach to the study of the process of the musical development of children, on the differential accounting age and individual peculiarities of schoolchildren, on the formation of the artistic interest.

Empirical research

Experimental work on the development of musical intelligence of children of junior school age consists of 3 stages: summative, formative and control

stage. The aim of the pedagogical experiment consists in confirmation of the effectiveness of the designed model and pedagogical conditions of the development of musical intelligence of children of junior school age during music classes, practical justification of expediency of applying adapted and designed in the process of the research methods of the development of musical intelligence.

During the summative stage of the experiment, a complex of research procedures has been developed, diagnostics of initial levels of the development of musical intelligence of junior schoolchildren has been done, the composition of control and experimental groups has been determined.

On this stage, educational work with children of junior school age, which is aimed at the development of musical intelligence of junior schoolchildren, has been studied.

With the aim to determine the effectiveness of the research, we applied the following methods: questionnaire on determining peculiarities of the development of musical intelligence of junior schoolchildren; observation over musical artistic activity of junior schoolchildren; music perception, its identification, transformation and reproduction or assessment of musical information receive on the lessons of the artistic cycle; comparative analysis of the research results.

Proceeding on R. Gardner`s theory of multiple nature of intelligence, we have done preceding work with the aim to detect the degree of formation of different types of intelligence of junior schoolchildren. Junior schoolchildren were offered to answer the questions of the questionnaire, which allowed detecting the inclination of a child to one or another type of activity.

R. Gardner`s questionnaire, which is based on the theory of multiple intelligence, consists of 28 statements. In the suggested questionnaire, a child has to mark numbers of statements which correspond to views of surveyed. Judging by reactions of surveyed, we can state the following: statements were understandable, time was spent a bit, within normal limits, all questions received full and clear answers, and there was no refusal on answering.

In the Fig.1 we can see, that all determined types of intelligence are presented, moreover, the most of all expressed visual-spatial intelligence, the least of all – linguistic. It is necessary to note musical intelligence: it is developed in children, but not on the high level (it is on the 6 levels in according to the level of importance).

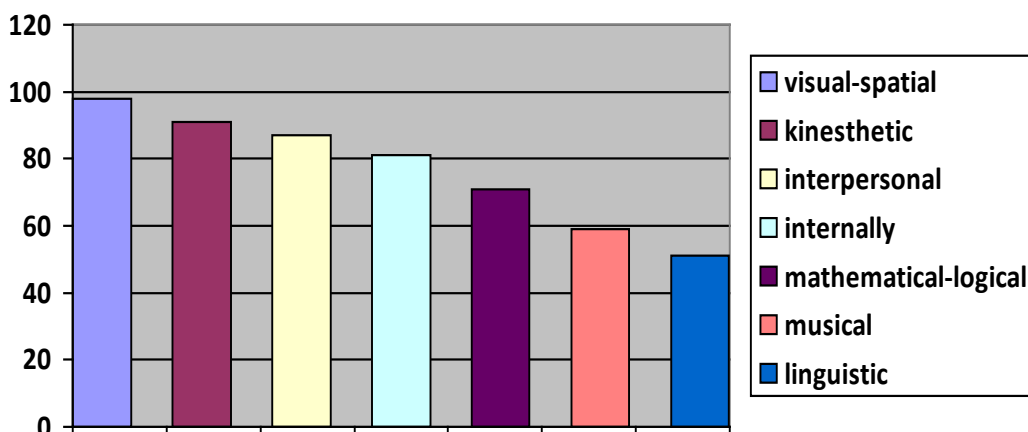


Figure 1 Types of intelligence (R. Gardner)

As a result of conducted diagnostic, junior schoolchildren were divided into an experimental group (EG) – 82 pupils and a control group (CG) – 80 pupils with the almost equal level of the musical intelligence development. The research was conducted in natural conditions of the educational process with the help of prepared techniques for studying each component of studied phenomenon.

On the stage of conducting the summative experiment, we singled out three levels of development of each component of musical intelligence of junior schoolchildren: low, medium, high (Table 1).

Though the experiment – assessment of the done tasks during music lessons, personal conversation about music, assessment of individual works, surveying junior schoolchildren – criteria and indicators have been singled out. Assessment of the done tasks by pupils has been done relying on mental and individual peculiarities of children and also in accordance with the difficulty of tasks.

Table 1 Levels and components of the development of musical intelligence

Component	Technique	Levels of the development of musical intelligence relying on the stated components		
		High level	Medium level	Low level
Cognitive	«Point the composer who wrote this music»	The interest of the child in music, the need for a permanent return to the favourite works in order to deep penetrate their content.	Insufficient interest of the child in music.	Virtually no interest of the child in unknown music.
	«Meeting with music»	Children ask to switch on the music of various forms and genres they have heard	Children quickly get tired and show	Children do not show much interest in music.

		in the classroom or outside it; the wealth of children's information	carelessness to music.	
Artistic-operating	«Composing music»	The degree of awareness of the plan, ingenuity, originality, individuality in the selection of means of an embodiment, the artistry of the embodiment of the plan, engaging in musical experience: based on knowledge and understanding of musical phenomena and events.	The degree of awareness intention, ingenuity, originality, individuality in the selection of means of an embodiment is less stable.	There are no musical knowledge and notions about musical phenomena
	Training-creative tasks	Correct execution of ten tasks directed on the development of certain skills, musical and creative abilities	Proper execution of six to eight tasks out of ten	Correct execution of five or fewer tasks out of ten
Reflexive	«Open yourself through music»	The openness of pupils, the desire to express themselves in music, the awareness of their feelings and emotions associated with music, a sense of involvement in music, its images, events.	It is not clearly expressed the openness of pupils, the unwillingness to express themselves in music, not always clear awareness of their feelings and emotions associated with music.	Lack of openness of pupils, lack of awareness of their feelings and emotions associated with music, misunderstanding of how to express themselves in music.
	«Choose your role»	Pupils independently characterize the meaning and development of the image, experimenting with the musical material. Original and expressive in their plans and forms of its embodiment. They manifest the pronounced need for various types of musical and creative activity.	Pupils are not sufficiently independent in characterizing the content and development of the musical image. They do not show a sufficiently pronounced need for various types of musical and creative activity.	The pupil needs the teacher's help in characterizing the content and development of the musical image. Does not reveal the need for various types of musical and creative activity

Diagnostic research has been carried out due to the detected components (cognitive, artistic-operating and reflective) and criteria, which allow determining the level of the development of musical intelligence of junior schoolchildren. With the aim to study of the level of formation of artistic-operating component we used the following indicators: practical skills and abilities in musical activity; possession of junior schoolchildren in ways of expressing artistic and aesthetic feelings; the ability to analyze the artistic and aesthetic situation, introduced by the teacher. Cognitive component analysis has been carried out based on the following indicators: stock music-theoretical and musical-historical knowledge; awareness of the stylistic affiliation of works of musical art, understanding of the specifics of musical art. The reflexive component study involved the usage of the following indicators: the ability to analyze their own aesthetic experiences associated with listening to music, draw conclusions about the internal state associated with the musical and creative activity (Table 2).

Table 2 The content of musical intelligence components of junior schoolchildren

Component	Criteria	Indicators	Techniques
Cognitive	The reserve of musical-theoretical and musical-historical knowledge; Understanding the style of music specifics.	Knowledge of the basic laws of musical art, musical forms, musical notes; skills and abilities to operate this knowledge in different types of musical activities.	«Meeting with music» «Point the composer who wrote this music»
Artistic-operating	Practical skills and abilities in musical activities.	Creative artistic interpretation of a musical composition; creation of a performing artistic image and its embodiment.	«Composing music» Tasks aimed at formation universal education actions.
Reflexive	Analysis of own aesthetic experiences associated with listening to music, self-analysis of the internal state associated with musical and creative activity of self-knowledge, self-examination	Aware of their ability to perceive music personally, to interpret their own impressions of heard music, to understand it, to endow its own personally meaningful meaning.	«Open yourself through music» «Choose your role»

Data on conducted diagnostic of levels of musical intelligence development of junior schoolchildren are reflected in the Table 3.

Table 3 Levels of musical intelligence development of junior schoolchildren during summative stage of the experiment

Component	Technique	Levels of musical intelligence development in accordance with the stated component					
		High level		Medium level		Low level	
		CG	EG	CG	EG	CG	EG
Cognitive	«Point the composer who wrote this music»	23,3 %	21,9 %	26,7 %	37,5 %	50 %	40,6%
	«Meeting with music»	23,3 %	31,2 %	30 %	34,4 %	46,7 %	34,4 %
Artistic-operating	«Composing music»	26,7 %	28.1 %	36,6 %	31,2 %	36,6 %	40,6%
	Training-creative tasks	23,3 %	28.1 %	36,6 %	31,2 %	40 %	40,6%
Reflexive	«Open yourself through music»	6,7%	15.6 %	6,7%	31,2 %	86,6 %	53.1 %
	«Choose your role»	6,7%	12,5 %	6,7%	37,5 %	86,6 %	50 %

Take in details techniques which we use on the summative stage of our research.

The technique “Point the composer, who wrote this music” (Кабалевский, 2001) has been used with the aim to determine the level of cognitive component development.

In musical development of junior schoolchildren the important things for us are: the openness of the child to unfamiliar music, the ability to find in it the main thing after the first listening; the presence of favourite high-artistic music, the frequency of appeals to the liked musical compositions, with a view to a deeper comprehension of their content. These positions allowed us to study both special techniques and systematic musical lessons, during which we celebrated the favourite musical works of children and the number of appeals to them.

During the music lesson, we asked pupils to indicate which musical composition they would like to listen to one more time at the end of the lesson. We were interested not only in children`s musical preferences but the dynamics of changes of schoolchildren`s attitude to the heard composition: do they reveal new perspectives in it. With this aim we repeatedly analyzed together with children compositions, drawing their attention to novelty in their answers.

According to the technique “Meeting with music” (Школяр, 2016) during the music lesson children were offered to plan the program of the last term lessons on their own decision and explain why do they prefer that or another kind of music. We put the following questions: “If you were the Teacher of music, which composition would you include on the last lesson in this term, what would you like to tell others with the help of music?”. The highest mark received pupils` stories, who, while planning, included compositions of different forms and genres, which had been heard on only during lessons but outside. The main thing in this technique is to increase the motivation of appealing to works

of art. The following musical information was taken into account: information about the composer, the author of the composition, acquaintance with the history of the creation of a musical composition, its vital content, variants of its own interpretation, the ability to sing, and to play melodies of compositions.

Artistic-operating component has been analyzed with the help of the technique “Composing music” (Школяр, 2016), which helped to reveal the degree of development of figurative representations, imagination, thinking in solving artistic and creative tasks, figurative listening, and vision. Application of the technique in practice is a creative process: the children were offered creative tasks, which contributed to the organization of independent musical activity of junior schoolchildren. The children chose the situations they liked (“Spring voices”, “Summer day”, “Rain sounds”, “Winter`s road”, “Fairy dream”), thought out original way of development of creative content of the future musical composition. For example, while choosing situation “Spring voices”, children imagined how arises life in the spring: snow is melting, sun warms the ground, the first flushes thrive. They expressed their own attitude to these events, proposed ways to implement their own designs in various types of musical and creative activities: playing children's musical instruments, singing, musical-plastic movements.

The verbal sketches of children became the basis on which gradually new characters, heroes appeared. We have watched what features of temperance were manifested in these characters, their relationships, how they are developing. By controlling the manifestations of children in their independent creative activity, we observed the process of an embodiment of the artistic conception of a musical work: as junior schoolchildren determine the means of musical expression, select children's musical instruments, and use vocal data, plastic. In the course of this work, one can observe the process of developing the thinking of junior schoolchildren in the creation of artistic images, the content of which they tell themselves or with the help of leading questions of the teacher.

The artistic manifestations of junior schoolchildren are not so easy to be controlled, because “technical mastery” of the reembodiment can be of the different levels, and that`s why this creativity can stay on the stage of the idea. That`s why we suggested the following criteria:

- the degree of awareness of the design of the work (independence of the plan, its logic, content);
- ingenuity, originality, individuality in the choice of means of reembodiment (argued non-standard, non-traditional);
- the creativity of the embodiment of the plan of a musical work in terms of concentration of the expression of the main idea;
- the manifestation of the child's accumulated musical experience (whether the characters perform well-known songs, whether the

learner relies on knowledge and ideas about musical phenomena and events (Яворский, 2004).

The emphasis in the analysis of children's musical creativity is on studying how the pupil plans his activity, starting with the motive of creativity and ending with the real embodiment of the plan of the musical work. The main criterion in this situation is the degree of combination of attributes of musical and creative activity - "I hear, think, feel, act."

Training-creative tasks are of the different degree of complexity. Their cognitive and interesting character allows them to develop in junior schoolchildren the ability to analyze, synthesize and draw conclusions, develop research skills, their intellectual abilities, and distribute the musical outlook of children.

The students were offered the following educational and creative tasks: look carefully at the note example, in which the notes are omitted, marked by degrees; inserting the necessary notes, sing a passage from the song "Hunter" by the composer N. Potolovskyi, first naming the notes, and then with the words. Some tasks together: 1) set the pitch risk in a note example; 2) define and put the length of the melody; 3) how long it is recorded; 4) sing a melody and name notes (Ветлугина, 2007).

When performing such tasks junior schoolchildren develop certain skills, including singing; the ability to perceive correctly, to feel the means of musical expression, not only emotionally, but consciously, without which it is impossible to master the musical art and the development of intelligence in the process of learning at the lessons of the artistic cycle in school.

The reflexive component was studied using the "Choose a Role" technique (Школяр, 2016). These are the main roles in the musical and creative activities of the composer, performer, and listener. The conversation at the music lesson involves finding out what role the pupil defined in the proposed situation; as he manifests itself in accordance with the role he chooses: independently inventing the development of the image, revealing its characteristic features, carefully selecting the forms of embodiment, experimenting with the musical material; how much the child is original and unusual in his plans and forms of its implementation; how vividly the junior schoolboy expresses the need to identify himself in solving the musical-artistic task set for him in various kinds of musical activity; Is he independent in the creative search.

After the music lessons, individual conversations were held, during which we clarified the attitude of junior schoolchildren to their own musical activity: "Did you like the role you performed? Why?", "What are your impressions of the lesson; Was interesting, fun, boring, indifferent? Why?", "How did you feel: good, fun, courageous when doing tasks?", "What role will you choose for yourself next time? Why?".

Technique "Open yourself through music" (Школяр, 2016). The purpose of this technique is to penetrate the depth of the personal attitude and perception of children by the musical work. Using the methodology in the learning process allows us to determine how junior schoolchildren "discover themselves" through music, are aware of their feelings and experiences, feel their own involvement in the content of the musical composition, its images, events. Junior schoolchildren are offered a part of the work, for example, a fragment from "Waltz of Flowers" P. Tchaikovsky, "Nocturne" F. Chopin, "Preludes" D. Kabalevsky, and three tasks are given.

Task 1. Students take the position of "interlocutor of music". The melody tells them something "tells", and then they retell about their feelings, thoughts.

Task 2. Children reveal the musical content of the work in the plastic movement.

Task 3. Children are asked to embody "themselves" in the drawings. It is necessary to emphasize the fact that a junior schoolboy draws his feelings while listening to music. This condition applies to all three tasks of the techniques because pupils' assessment the pupil of his spiritual world is important. Music acts as a source, a catalyst for self-esteem, self-analysis of the musical and creative activity of the child.

The content of work on the development of musical intelligence of junior schoolchildren during the artistic lesson provided:

- determining the level of development of the musical intelligence of junior schoolchildren by the consequences of diagnosis, specifying the directions of musical activity that corresponds to the tasks set;
- the use of principles and methods that promote the development of musical intelligence of junior schoolchildren.

At the formative stage of the experiment, the model and pedagogical conditions aimed at solving the problems of the development of musical intelligence of junior schoolchildren at artistic lessons were developed and introduced into the educational process, which consisted of:

- creative interaction between the teacher and pupils;
- taking into account age and individual abilities, skills of children;
- creating a stable motivation for pupils to realize themselves in musical activities;
- the direction of the content of work on the development of musical intelligence in children to strengthen the individual-differentiated and personal nature of training (Brovchak, Starovoit, & Likhitska, 2018).

The pedagogical model of the development of intelligence of junior pupils is the basis for the implementation of the educational process in an educational establishment. In our research, the model of the educational process is an open pedagogical system with a plurality of external and internal factors, which, in

turn, are conditions for the development of intelligence. Since the simulation process consists in separating the essential in the studied object, we chose the main factors that influence the development of intelligence of junior pupils.

The pedagogical model of the development of musical intelligence of junior pupils at music lessons contains the goal of this direction of the development of the child's personality, its task, principles, methods, components, its criteria, indicators of development, determination of levels, development and implementation of pedagogical conditions, that is, reveals the content structure of the problem under our research.

The development of the main directions of the organization of the educational process, which contributes to the development of musical intelligence of children of junior school age, is the first stage in the implementation of the model. At this stage, it is important to identify the main components of this process and the causal relationships between them.

The construction and justification of the model in the context of the problem of the development of the musical intelligence of junior pupils at music lessons is the second stage of development. In the process of determining the pedagogical conditions of the development of musical intelligence of junior pupils we took into consideration firstly, – the activity and content of the process of musical development of the individual, and secondly – stimulation, creation of a certain situation, and, thirdly, – assistance to junior pupils in the educational process.

The third stage is the development of pedagogical conditions that promote the development of musical intelligence of junior pupils. This stage specifies and structures the goals and objectives of the process of development. Focusing on qualitative and integrative criteria of musical development of pupils in the process of learning at music lessons, the main goal is the development of artistic and creative personality. The methodical requirement for the development of pedagogical conditions is the correct idea of the special provisions, the organization of which is carried out by us the process of the development of musical intelligence of junior pupils.

Of great importance in the development of musical intelligence in junior schoolchildren is the creation of the artistic and creative atmosphere of the music. Positive microclimate at music lessons plays an important role in the process of teaching children. The creative atmosphere at the music lesson was provided by us thanks to: a specially selected musical repertoire, the technical equipment of the cabinet of music and its aesthetic design, the active use of technical means of teaching (objective indicators) and pedagogical skills, emotional and psychological adjustment for creative collaboration with pupils (subjective indicator).

During the organization and implementation of the formative stage of the

experiment, we were guided by the following principles for the implementation of the tasks of methodological work: relying on familiar material, taking into account previous musical experience; activating musical activity through dialogue forms of work; control over the process of musical development; specially selected musical repertoire; organizing different kinds of musical activities within one lesson.

Based on the results obtained during the diagnostic examination, conclusions were made on the effectiveness of such methods for the development of musical intelligence: reflections on music (D. Kabalevsky), a method for developing skills and abilities for listening to music (N. Hrodzenska), Cinquain (A. Krepsi), the method of intonation and style comprehension of music and modeling of artistic and creative process (O. Krytska L. Shkoliar), the method of auditory examination (Ye. Nazaikinskyi). The purpose of using methods for developing musical intelligence was to create a psychological atmosphere of creativity for junior pupils, which beneficially affected their emotional state, feelings and thoughts, development of cognitive potential.

The recommendations for the selection of tasks were as follows: musical repertoire, exercises and tasks should be accessible for the perception of those who study; aimed at developing certain skills and abilities; should be emotional, contributing to the development of mental processes in the child at the artistic lesson.

During the research, the educational tasks of the pupils` personality development were solved: the formation of a positive attitude to their abilities and opportunities; increase self-confidence and independence; development of general and musical abilities; formation of skills of thinking activity.

During the control testing, a re-diagnosis of the development of music intelligence was conducted on the basis of the created model, pedagogical conditions, new principles and methods.

For the sake of clarity, we illustrate the changes in the tables of the components of the musical intelligence of children in the control and experimental groups at the summative and post-formation stages (Fig. 2, 3, 4).

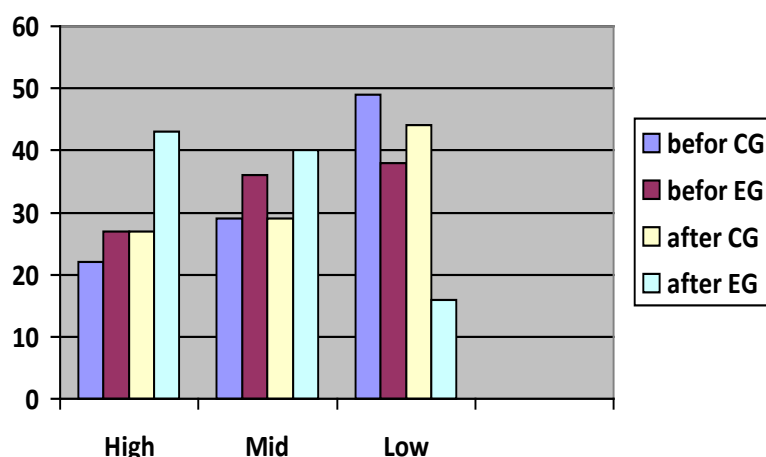


Figure 2 Comparative assessment of the development of the cognitive component of musical intelligence of junior schoolchildren of the control and experimental groups

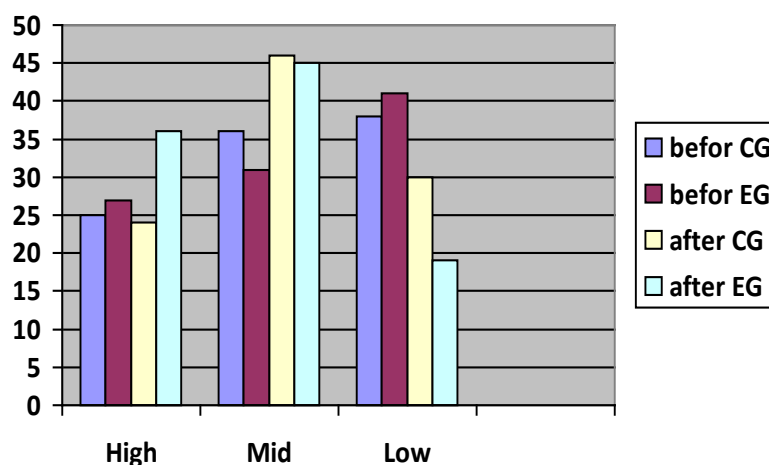


Figure 3 Comparative assessment of the development of the artistic-operating component of musical intelligence of junior schoolchildren of the control and experimental groups

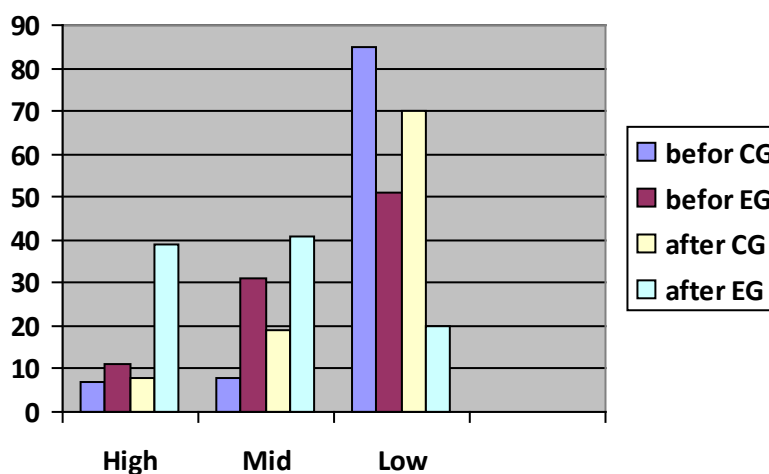


Figure 4 Comparative assessment of the development of the reflexive component of musical intelligence of junior schoolchildren of the control and experimental groups

The results of the formatting stage of the experiment indicate that the level of development of musical intelligence of junior schoolchildren in the experimental group significantly increased, while in the control did not increase significantly.

Our work contributed to the development of musical intelligence of children of junior school age in the educational process at the music lesson. Many of children have the well-formed cognitive component: in children from CG - from 23.3% to 26.6%; in EG - from 26.6% to 44%.

The development of the artistic-operating component was demonstrated during the creative artistic interpretation of the musical work, the creation of the artistic image and its embodiment in the process of imaginary experimentation with means of musical expression (in the CG level decreased from 25% to 24.4%, in EG significantly increased: from 28, 1% to 35.3%).

The effectiveness of the formation of the reflexive component is the awareness of junior pupils of their ability to personal perception of the musical work, the interpretation of their own impressions of the heard music, that is to reflexive-critical analysis of their musical and creative activity in the process of studying at the lessons of the artistic cycle in the school (in CG - from 6, 7% to 9.3%, in EG - from 14.1% to 38.3%) (Table 4).

Table 4 Levels of musical intelligence components development at the control stage of the experiment

Component	Technique	High level		Medium level		Low level	
		CG	EG	CG	EG	CG	EG
Cognitive	«Point the composer who wrote this music»	26,7 %	34,4 %	26,7 %	46,8 %	46,6 %	18,8%
	«Meeting with music»	26,7 %	53,1 %	33,3 %	34,4 %	40 %	12,5 %
Artistic-operating	«Compose music»	30 %	31,3 %	50 %	43,7 %	20 %	25%
	Training-creative tasks	16,7 %	37,5 %	43,3 %	43,7 %	40 %	18,8%
Reflexive	«Open yourself through music»	10%	46,8 %	23,3%	34,4 %	66,7 %	18,8 %
	«Choose your role»	10%	28,2 %	16,7%	46,8 %	73,3 %	25 %

The control stage of the experiment included an evaluation of the results of the formatting stage of the experiment and a comparative analysis of the results of the research: a) a comparative analysis of the questioning of junior schoolchildren showed that the prevailing majority of junior schoolchildren showed an interest in musical and creative activities; b) a conscious and active position of the teacher of music, working on creating pedagogical conditions for

the development of musical intelligence of junior schoolchildren in the process of teaching music, ensures the personal development of children in the desirable direction (Fig. 5, 6).

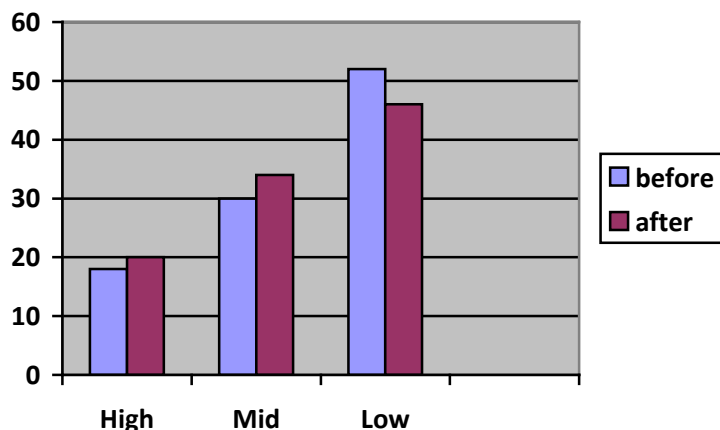


Figure 5 Dynamics of the development of musical intelligence in junior schoolchildren of the control group

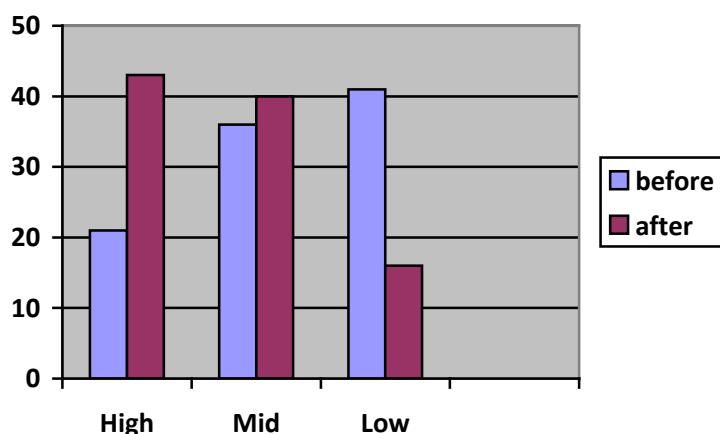


Figure 6 Dynamics of the development of musical intelligence in junior schoolchildren of the experimental group

Comparing the results of the pedagogical experiment at different stages, one can see that in the experimental group the dynamics of the development of musical intelligence (the number of children with a high level) has improved significantly.

The conducted pedagogical experiment convincingly confirmed the expediency of the substantiated and implemented in the educational process model and pedagogical conditions for the implementation of a differentiated approach to the development of musical intelligence of junior schoolchildren at the lessons of the artistic cycle.

Conclusion

Creation in the experimental conditions of the musical and creative atmosphere at the music lessons allows you to conduct a diagnosis, an individual and differentiated approach to each pupil, to develop special programs on musical education of junior schoolchildren. The analysis of the results of the experimental research confirmed the relevance of the idea of developing a model and creating the necessary pedagogical conditions for the development of musical intelligence of junior schoolchildren. The realization of these opportunities manifests itself in the development of the general ability of junior schoolchildren to study, in improving the value-oriented process of learning music information on the basis of auditory experience, understanding and application of abstract concepts, in exacerbating the critical rethinking of existing knowledge, as well as in improving the efficiency of the solution of artistic and creative tasks. This process is due to the joint activities of the teacher of music and junior schoolchildren, aimed at building the abilities of children to non-standard thinking and creative manifestations in various types of musical activity.

References

- Brovchak, L.S., Starovoit, L.V., & Likhitska, L.M. (2018). Pedagogical Conditions for Creative and Artistic Development of Children of Senior Preschool Age by Means of Art. *New Educational Review*, 52(2), 206-217.
- Акімова, М.К. (2005). *Психологічна діагностика*. Харків: Світ.
- Венгер, Л.А. (2003). Оволодіння опосередкованими вирішеннями пізнавальних завдань і розвиток когнітивних здібностей дитини. *Педагогіка і психологія*, 2, 43–50.
- Ветлугина, Н.А. (2007). *Музыкальное развитие ребенка*. Москва: Просвещение.
- Голуб, О.О. (2000). *Індивідуальні особливості пам'яті людини*. Київ: Педагогіка.
- Кабалевский, Д.Б. (2001). *Основные принципы и методы программы по музыке для общеобразовательной школы: Программно-методические материалы*. Музыка. Начальная школа. Москва: Просвещение.
- Пиже, Ж. (2003). *Психология интеллекта*. Спб.: Питер.
- Школяр, Л.В. (2016). *Музична освіта в школі: навчальний посібник*. Київ: Вища школа.
- Штерн, В. (2013). *Розумова обдарованість: Психологічні методи випробування розумової обдарованості та їх застосування до дітей шкільного віку*. Київ: Інститут психології
- Яворский, Б.Л. (2004). *Музыкальное мышление*. Москва: ГЦММК им. М.И. Глинки.