

## ANNOTATION

on the dissertation work for degree of Doctor of Philosophy (PhD) in specialty 6D010200 - Pedagogy and methodology of teaching in a primary school Sartayeva Nazgul Tashkenbayevna on the theme «The formation of research activity motivation of primary school students on the basis of information technologies».

**Actuality of the research.** Due to the introduction of new paradigms in education, in the XXI century, the demand for formation of a competitive personality is growing. Its peculiarity is characterized as being an individual who is capable of solving complex problems, thinking productively and researching actively.

The state program of the Republic of Kazakhstan on development of education and science for 2016 – 2019, states that the modern stage of modernization of Kazakhstani education and science system is designed to develop research and creative competences of each person. Hence, as a part of the dynamic lifestyle changes in the society, schoolchildren should make the right choices, and accordingly, seek to increase their research potential. And pedagogical process at schools is making a breakthrough in the development of these opportunities.

In the section "Requirements for Educational Activities" of the State Generally Binding Standard of Primary Education of Kazakhstan Republic is noted that the objective of primary education is to create an enabling environment for the harmonious formation and development of the individuality of the student who has mastered the basics of several wide-ranging skills. One of those skills is the ability to conduct researches.

Therefore, we understand that at the present the educational process involves not only the formation of general educational competence and skills, but also the creation of favorable conditions for a comprehensive, harmonious development of the student's individuality. It is important that each child forms and develops a certain cognitive-competitive ability. It is well-known that every child's ambition to become a researcher, to study, and to realize his internal cognitive capabilities is high. Thus, in our opinion, research activity is one of the appropriate ways to discover and develop the aptitude of the child.

In pedagogical works, the research activity of primary school students is interpreted as an activity, which is carried out in finding an uncertain solution of learning purpose, and as a result of which, the joint creative activity of the teacher and student is fulfilled. In this case, the teacher acts as the organizer of the forms and conditions of research activity. It is not enough for schoolchildren just to make a decision in solving the problem of learning purposes, but also the results achieved in the implementation process should be beneficial to someone. From this point of view, the relevance of the problem of formation of motivation, propelling students to acquire research skills constantly increases. In our opinion, an effective tool for formation of motivation is new pedagogical technologies. We believe that, in particular, information technology has a great potential.

During the analysis of the works of domestic and foreign scientists, where the abovementioned problem was considered, by the methodology of psychological,

pedagogical, and individual disciplines, there has been determined that the problems of organization of research activity of students, formation of motivation, and use of information and communication technologies were not considered at one joint point, but each in their own way. They are classified as follows:

- theoretical grounding of the problem of research activity is examined in the works of scientists, such as A.N. Leontiyev, D. Berline, A.N. Poddyakov, A.N. Svayenkov, Sh. Taubayeva, A.E. Abilkasymova, U.B. Zheksebayeva, Z.A. Isayeva, S.S. Izmukhanbetova and others;

- S.A. Baizhanova, G.K. Baimukasheva, N.G. Daumov and other scientists have research works regarding the problem of accustoming to research through information technologies;

- the problem of formation of motivation is examined in the works of A. Disterveg, A.N. Leontiyev, L.I. Bozhovich, A. Maslou, N.F. Talyzina, K.B. Zharykbayev, T. Tazhibayev, Zh.T. Dauletbekova, M.M. Akizhanova, E.R. Nurtayev and others;

- the problem of the concept for “information technology” - the most effective tool of formation of motivation in research activity and its application in the learning process is thoroughly examined in the works of E.I. Mashbits, V.P. Bepalko, V.V. Davydov, V.E. Monahov, Yu.S. Branovsky, A.A. Kuznetsov, E.S. Polat, V.A. Sadovnichy, A.Yu. Uvarov, V.V. Guzeev, T.A. Sergeeva, Zh.A. Karayev, E.Y. Bidaybekov, S.M. Kenesbaev, B.B. Baimukhanov, D.M. Dzhusupalieva, S.S. Kunanbayeva, B.D. Sydykov, M.S. Malibekova, Zh.Y. Sardarova, S.K. Abdivekova and others;

- E.L. Goncharova, O.I. Kukushkina, A.P. Ershov, G.B. Kochetkov and others studied general computer literacy according to its significance, and the content of teaching;

- the main directions of the process of education and public informatization, the issues of development of information competence are shown in detail in the researches of K.K. Platonov, N.V. Kuzmina, A.K. Markova and others;

- the purpose, content, principles, psychological and pedagogical basics of preparation of teachers to use ICT in teaching process are given in the works of E.A. Vyushkina, V.V. Grishkun, T.O. Balykbayev, B.A. Almukhambetov, T.M. Baymoldayev, G.K. Nurgalieva, D.N. Kulibayeva, S.T. Mukhambetzhanova, A.E. Sagymbaeva, Zh.Zh. Nurzhanova, A.B. Medeshova, B.T. Abykanova, N.T. Yermekov, A.K. Moshkalov, E. Uaidullakzy and others;

- works of scientists, such as G.S. Bazarbayeva, S.S. Dayirbekov, S.O. Zhetpisbayeva and others, who studied the basics of the use of computers in teaching mathematics to students are known;

- there are research works of scientists, such as Sh.Amonashvili, L.V. Zankov, S.N. Lysenkova, N.F. Talyzina, V.F. Shatalov, A. Aldamuratov, Zh.I. Namazbayeva, S. Zhakypov, A.R. Yermentayeva, N.K. Toksanbayeva, M.K. Bapaeva and others regarding the problems of organization and improvement of pedagogical process in primary schools.

The analysis of the special scientific and pedagogical works and literature determined that the issue of formation of research activity motivation in primary

school students, although it was considered, the problem of formation of research activity motivation by using information technology has not been thoroughly investigated, and learning information technology was considered as a literacy of second in importance.

On the basis of the problem there was identified that there were contradictions between:

- the actuality of formation of research activity motivation in primary school students in accordance with social demands and the incompleteness of the use of opportunities of information technology, which is an effective means of solving this problem;

- the necessity of formation of research activity motivation in primary school students on the basis of information technology in modern pedagogical conditions and the lack of scientifically-based methodological system and practical approach to solving this problem.

The study of solution of specified contradictions was the basis for our dissertation topic selection of "The formation of research activity motivation of primary school students on the basis of information technologies".

**The purpose of the research:** theoretical grounding of formation of motivation in a research activity for primary school students on the basis of information technologies and use in practice by making its methodology.

**The object of the research:** a single pedagogical process.

**The subject of the research:** formation of motivation for primary school students in a research activity on the basis of information technology in primary education process.

**Scientific hypothesis of the research:** If the process of formation of motivation for primary school students in a research activity on the basis of information technologies is based on the theoretical basis, the structural-substantive model is experimentally tested and the educational and methodical complex of the subject "Information and communication technologies", effectiveness of which is proven, is included in the process of secondary school, the possibility of formation of motivation for primary school students in a research activity on the basis of information technologies will increase, because the educational and methodical complex will promote to form research activity motivation.

**The objectives of the research:**

- to identify the meaning of the concepts "research", "research activity" and "research activity motivation" in primary education process;

- to identify psychological-pedagogical peculiarities of using information technology in primary education process;

- to develop structural-substantive model of formation of motivation for primary school students in a research activity on the basis of information technologies;

- to prepare educational-methodical complex of the subject "Information and communication technologies" (3-grade) in formation of motivation for primary school students in a research activity on the basis of information technologies, to examine its effectiveness with experimental works, and prepare scientifically-grounded recommendations.

**The main idea of the research:** the methodology aimed at formation of motivation for primary school students in a research activity on the basis of information technologies will improve their research skills, and will develop competitive, active, self-sustaining personality in accordance with information society demands.

**Theoretical and methodological basics of the research:** the position of scientists about the unity of theory and practice in philosophy, psychology, pedagogy; the concept of informatization of the education system, as well as the concepts consistent with the research work in the field of psychology, pedagogy, sociology, the theory of research activity, scientific concepts about formation of motivation, the theory of uniform pedagogical process; systematic, active, competent, personal and research bases of organization research activity.

**Sources of the research:** Regulatory documents and educational-methodical complexes (standards, standard curricula, textbooks, manuals, etc.) related to the problems of primary education of the Ministry of Education and Science; works of philosophers, psychologists, pedagogues, scientists on the subject of research; scientific researches and works about the use of information and communication technologies in the educational process; scientific achievements and best practices of school teachers.

**The research methods:** theoretical methods: analysis and review of literature on philosophical, psychological, pedagogical, methodological researches, analysis of educational standards, educational programs, other regulatory documents and pedagogical best practices, inductive-deductive analysis, synthesis, comparison, modeling; empirical methods: control, interview, inquiry, testing, pedagogical experiment, mathematical statistical methods of processing experimental data.

**The research base:** school №10 named after I. Altynsarin, school-gymnasium № 2 for gifted children "Murager" with education in three languages in Kyzylorda and secondary school №10 in Kostanay. 119 pupils took part in the experiment.

**The scientific novelty and theoretical significance of the research** are determined by the following aspects:

- the meaning of the concepts "research", "research activity" and "research activity motivation" in the primary educational process has been identified;
- psychological and pedagogical peculiarities of the use of information technology in the organization of research activity in the primary education process and in the formation of motivation of research activity have been defined;
- a structured-content model of formation of motivation for primary school students in research activity on the basis of information technologies has been developed;
- didactic bases of educational-methodical complex (textbooks, workbooks, methodical instructions for teachers) used on the subject "Information and communication technologies" for the purpose of formation of motivation for primary school students in research activity on the basis of information technologies has been determined, and the educational-methodical complex has been included in the primary education process.

**Practical significance of the research:**

- during the study, a special methodology promoting the formation of motivation for primary school students in research activity on the basis of information technologies and improving the quality has been developed;

- theoretical and practical results achieved during the study can be used as a tool for preparing future primary school teachers of secondary schools and for conducting courses, seminars and workshops in professional development institutes for primary school teachers.

**Principles recommended for defense of the research:**

1. Research activity motivation of primary school students is diligence towards the work of creative nature, which is characterized by new, subjective knowledge based on factual evidence, facts, and which requires pursuit and activism. Research activity motivation might be formed as internal motivation (internal student intention, understanding of the importance of research) or external (impact of the surrounding, reliance on public opinion)

2. The use of information technology in the primary education process promotes and can be a reliable support for students in being active in implementing educational-cognitive activity, being initiative in absorbing new knowledge and generating their own ideas, increasing the research activity motivation in the educational-cognitive process, building the skill of using new information technology independently. Guiding psychological and pedagogical peculiarities of the use of information technology in the primary education process is a reliable way of making the educational process in primary classes qualitative and more effective in terms of modern requirements.

3. The structural and content model of formation of research activity motivation for primary school students on the basis of information technologies includes set of motivational, content and active components, by determination of measures and indicators based on systematic, active, competent, personal and competitive stand, and is carried out in accordance with high, medium, low levels.

4. The methodology of formation of research activity motivation for primary school students on the basis of information technologies should be provided with the educational-methodical complex of subject "Information and communication technologies" for the 3rd grade of secondary schools, specially developed for this purpose, only educational and cognitive activities complementing each other will be pillar in making research activity natural and qualitative skill.

**The relevance and reasonability of the research results:** has been provided with the scientific-pedagogical basics of the research, the differentiated use of information technologies in line with the research subject, the experimental work plan, the objectives of the research objectives, the use of mathematical and statistical methods by initial and final results taken in accordance with the research objectives, the check of identified content facts, the introduction of educational-methodical complex of subject "Information and communication technologies" developed for the 3rd grade of secondary school in the educational process.

**Published scientific works:** on the theme of dissertation work there were published a total of 25 scientific works. 2 articles – in the international edition included in the Scopus Base, 4 articles - in scientific editions recommended by the

Committee for Control of Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan, 7 articles - in materials of foreign international, 1 article - in the materials of foreign international scientific-practical conferences organized by RK, 2 articles – in the international scientific edition, 1 article – in the collection of materials of interdepartmental international scientific-practical conference, 1 article - in state scientific journal, 6 – in textbook, workbook, educational-methodical complex (in Kazakh, Russian languages) consisting of methodological complex for teachers on the subject “Information-communication technologies”, 1 – in the complex of visual demonstrative charts on the subject ‘Kazakh language’.

**The structure and content of the dissertation.** Dissertation consists of the introduction, 2 sections, conclusion, reference list and appendix. The total volume of the work is written on the 159 page by computer. It has 33 tables and 30 pictures. The reference list consists of 188 titles.