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ANALYSIS OF PRIMARY SCHOOL TEACHERS' PROJECT- RESEARCH ACTIVITY

Abstract

The paper represents the analysis of current situation on the results on conducted survey related to the organizing of project-research activity by primary school teachers. Also, having made a literature review, the study accentuates the importance and necessity of project-research activity at primary school. The aim of this research is to bring teachers' attitude to project-research activity and difficulties they face into prominence. For this purpose, diagnostic survey was conducted and the results were analyzed, as the paper represents the initial part of a wider research. Although project-research activity is organized in all schools, more than half of the respondents do not organize this activity and do not know how to do that. The study has highlighted main reasons of why some teachers do not organize project-research activity with their students.

It is not the final evaluation of the problem aforementioned, it will be further developed. The conclusions presented in the article regarding the project-research activity of primary school teachers will be continued and clarified in the next stages of the research.

Keywords: primary school, primary school teacher, project activity, research activity, project-research activity, analysis.

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БАСТАУЫШ СЫНЫП МҰҒАЛІМДЕРІНІҢ ЖОБАЛАУ-ЗЕРТТЕУ ӘРЕКЕТТЕРІН ТАЛДАУ

Аңдатпа

Мақалада бастауыш сынып мұғалімдерінің жобалау-зерттеу әрекетін ұйымдастырудың ағымды жағдайы өткізілген сауалнаманың қорытындысы бойынша талданған. Тақырып бойынша әдеби шолу жасалынып, зерттеуде, сонымен қатар, бастауыш мектептегі жобалау-зерттеу әрекетінің маңыздылығы мен қажеттілігі қарастырылған. Бұл зерттеудің мақсаты – бастауыш сынып мұғалімдерінің жобалау-зерттеу әрекетіне көзқарасын және олар кездесетін қиындықтарды айқындау. Осы мақсатта диагностикалық сауалнама жүргізілді және нәтижелер талданды. Барлық мектептерде жобалау-зерттеу әрекеті ұйымдастырылғанмен респонденттердің жартысынан көбі аталған әрекетті ұйымдастырмайды және қалай ұйымдастыру керек екенін білмейді. Мақалада көрсетілген диагностика кешенді зерттеудің бастапқы бөлігі болып табылады. Зерттеу кейбір мұғалімдердің оқушылармен жобалау-зерттеу әрекетін ұйымдастырмауының негізгі себептерін көрсетеді.

Мақалада бастауыш сынып мұғалімдердің жобалау-зерттеу әрекеттеріне қатысты ұсынылған тұжырымдар зерттеудің келесі кезеңдерінде жалғасын тауып, нақтыланады.

Түйін сөздер: бастауыш мектеп, бастауыш сынып мұғалімі, жобалау әрекеті, зерттеу әрекеті, жобалау-зерттеу әрекеті, талдау.

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АНАЛИЗ ПРОЕКТНО-ИССЛЕДОВАТЕЛЬСКОЙ ДЕЯТЕЛЬНОСТИ УЧИТЕЛЕЙ НАЧАЛЬНЫХ КЛАССОВ

Аннотация

В статье представлен анализ современного состояния организации проектно-исследовательской деятельности учителей начальных классов по результатам проыеденного опроса. Сделав литературный обзор по темеб также, в работе акцентируется важность и необходимость проектно-исследовательской деятельности в начальной школе. Цель данного исследования - выявить отношение педагогов к проектно-исследовательской деятельности и трудности, с которыми они сталкиваются во время ее организации. Для этого было проведено диагностическое анкетирование и проанализированы результаты, так как статья представляет собой начальную часть более широкого исследования. Хотя проектно-исследовательская деятельность организуется во всех школах, более половины респондентов эту деятельность не организуют и не умеют ее организовывать.В исследовании выделены основные причины, по которым некоторые учителя не организуют проектно-исследовательскую деятельность со своими учениками.

Это не окончательная оценка вышеупомянутой проблемы, она будет развиваться дальше. Представленные в статье выводы относительно проектно-исследовательской деятельности учителей начальных классов будут продолжены и уточнены на следующих этапах исследования.

Ключевые слова: начальная школа, учитель начальных классов, проектная деятельность, исследовательская деятельность, проектно-исследовательская деятельность, анализ.

Introduction. Nowadays, not only mobile and flexible specialists are needed in all areas of professional spheres but also able to organize their activities. A modern specialist should be able to extract and analyze the information he needs, find a way out of non-standard situations, detect a problem and solve it effectively, and do his job creatively.

The State Comprehensive Educational Standard of higher and postgraduate education, Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 No. 2 spelled out the following learning outcomes that characterize the abilities of students:

1) to demonstrate knowledge and understanding in the field of study, based on advanced knowledge in the field of study;

2) to apply knowledge and understanding at a professional level, formulate arguments and solve problems in the field of study;

3) to collect and interpret information for the formation of judgments, taking into account social, ethical and scientific considerations;

4) to apply theoretical and practical knowledge to solve educational, practical and professional tasks in the field of study;

5) learning skills necessary for independent continuation of further education in the field of study;

6) to know the methods of scientific research and academic writing and apply them in the field of study;

7) to apply knowledge and understanding of facts, phenomena, theories and complex relationships between them in the field of study;

8) to understand the importance of the principles and culture of academic integrity [1, 1].

Therefore, today's educational process is aimed at helping future professionals master those skills that would help them throughout their lives.

The training of the best personnel, in our case, primary school teachers, is a factor of the further development of the country. In his Address, the President of the Republic of Kazakhstan Kasym-Zhomart Kemelevich Tokayev said: “The strength of the nation lies in people, in their health and deep knowledge... It is extremely important that professionalism and diligence be highly valued in our society” [2, 2]. This determines the topicality of our study and the objective need to improve pedagogical activity. In this regard, the task arises: the modernization of the education system that meets the requirements of modern life.

For this moment, pedagogical technologies and new educational directions are of a high significance in order younger students can express and realize themselves personally and socially. Teacher-centered education days passed long ago, now student-oriented era has come.

The big focus should be on primary education. Primary school students are open for any exciting information and soak it if they are motivated. They are curios by nature and science education in a form of projects may show positive results [3, 2]. In our opinion, education at primary school will be more effective if both students and teachers are engaged in project and research. Currently, one of the leading pedagogical technologies is project-research activity. Emphasizing once again the topicality of our research question, we affirm that project-research activity contributes to an in-depth study of the subject with interest, and the formation of those competencies that would not be achieved with traditional education. In our coming research we will define which precise competences might be formed during project-research activity. Furthermore, project-research activity creates learning conditions for applying the knowledge by students on real examples and implementing it in real life.

Project-research activity is a joint educational, cognitive, creative activity that has a common goal, agreed methods, ways of activity aimed at achieving a common result, which contributes to the development of independence, purposefulness, responsibility, perseverance, tolerance, initiative, in the process of working on a project children acquire social practice outside of school, adapt to modern conditions of life.

A review of related scientific literature indicates what are "research activity" and "project activity" and interesting discoveries on the topic. It should be pointed out that these two aforementioned activities had not been linked together, they were considered separately before. Only in the middle of 90s of the 20th century scientists "refreshing" project method linked with research approach. It is well known that research approach is directed to forming searching abilities of children. Obviously, curiosity, desire for new experiences and independent experiments are biologically determined features of a child. Thus, research activity is natural process for schoolchildren. And correctly organized project work just promotes it.

Research-based learning helps to the students of primary school to get a deep knowledge of the topic and draw the conclusion. That makes them understand the whole subject. "Usually, research-based learning is linked to the subject of "natural science" in elementary grades, but it can serve as a basis for any subject, and it is perfectly suited for social issues such as outlook" [4, 37].

Nowadays majority of scientists prefer the research approach in teaching, noting its advantages, but, in fact, the research approach is frequently used only in teaching the natural sciences. We believe that research approach can be used in teaching any subject.

In today's educational practice, the significance of research activity of the child is clearly underestimated, in teaching some subjects. As we know if the educational process is based on the assimilation of truths discovered by someone, children will lose their curiosity and desire for exploration of something, ability to solve problems and see the connection between disciplines. Because of this, the processes of self-learning, so necessary in the real world, become difficult. The project-research activity is aimed at developing the children's abilities for self-development, self-education, which, in turn, help them to increase the relevance of the knowledge gained and understand the processes happening in the real world.

Research-based learning, as learning though own experience, was observed during periods of real democratization of education, when teachers sought to bring the educational activity of the child as close as possible to cognitive. The main goal of such education is formation in the student ability to independently, creatively master and rebuild new ways of activity in the sphere of human culture [5, 54].

Project-based learning widely used and a variety of research is being carried out in this area. Mohamad Syarif Sumantri, Gilar Gandana and others in their study note that creator-centered project-based learning is one of the developed learning models that emphasizes the concept of stimulating the development of creativity, productivity and innovation of students. Such training encourages students to solve real problems and significantly increase the learning activity of students. The realization of the goals of human life requires an active role from oneself, supported by the role of other people outside oneself [6, p. 198].

Rumyana Y. Papancheva assrets that the position of the teacher is among students during the project-based learning and just guides them in order primary school students achieved a final result of their independent research. Then the author of the articles adds some details: the project work might be organized in different forms of education like group work, pair work or, we would add here also individual work; realizing the project the students act as researchers, of course, if the project task aimed at it; fulfilling of the tasks are assessed by composed criteria. By the way, the criteria may be made by students themselves, to our mind. The result of the project work should be shown for audience [7, 1]. Demonstration of the final result means being reflective for

both your own activity and activity of others. As we have mentioned above the indices for that are criteria mostly made by students on their own.

Another advantage of the project-research activity is that it might be conducted not only in classroom but out of school as well. Out of school project and research make students be close to surrounding environment, care nature and the location where he lives.

Researchers, Canan Laçin-Şimşek, Aysun Öztuna-Kaplan, conducted a study to determine the impact of project activities on teachers' awareness of extracurricular learning. At the beginning of the study, teachers stated that they were confident in organizing out-of-school trips. However, when they were asked what they had done during the trips they organized, it was clear that their practice was limited to procedures and student supervision, but their awareness that the trips were related to the lesson was quite low. At the end of the study, it was found that the awareness and knowledge of participating teachers in organizing qualified field trips improved through practical activities. They reported that they understood what needs to be done for a quality visit, and also learned the features of the observation form, worksheets and educational games that should be prepared for these visits [8, p. 252].

In spite of the fact that project activity is quite multifaceted and requires much effort and time, training of a teacher it allows satisfying a child's curiosity, increases a child's awareness, introduces natural phenomena, and gives an opportunity to success. This in turn becomes a motivating factor for a teacher in order to involve children into project-research activity. We would like to remember in addition that the most essential function of the teacher is to discover the inner potential of the child. Thanks to research and project activities we can find gifted children who might be the promotor of the school and what is more to contribute for development of the country. If certainly, the potential of the child is developed in the right course. According to G.V. Burmenskaya's point of view, such work must be systematic and not only concern teachers but also educational institution together with parents. At present, there are many experiments in the formation of such a system. For example, creative assignments, thought-provoking questions and tasks; extracurricular work like additional classes, elective courses, clubs of different kinds, theatre studios, Olympiads, intellectual contests, etc. [9, 28].

From perspective of students, project-research activity is a great possibility to independently create an intellectual result, realizing the most of your opportunities. It is an ability to be self-assured, an attempt make something by hand and demonstrate it to other people [10, 2]. Summing up, if the teacher inner abilities of a child and develops them he will not have the problem with motivation of students for learning.

At present, we can find the fusion of project-based learning with other types. As an example, we suggest the case study of Todor S. Simeonov from Institute of Rhetorical Communications who combined the former with blended learning in Bulgarian classroom. As for the scientist: "Project-based learning, complemented with blended learning, could be an effective method to achieve better student engagement, by transferring the focus on students, thus creating student-centered lessons, where core twenty first century skills like communication collaboration, critical thinking and creativity are addressed" [11, 4]. One more difficulty was coped with suggested blended project-based learning, to be exact, psychological climate in the class and some interpersonal conflicts stated by the administration.

Another exciting study says about the relationship between teaching and research from studio-based learning. The author, Aydin Ozdemir, focuses on the studio-based learning to stimulate the quantity and quality of landscape research. The outcome of the paper provides the debate on the role of research-based activity on developing better design education. In conclusion he points out several advantages of research-based studio learning which are close to the results of project-research activity at primary school. We would emphases these: students start asking more advanced and relevant questions, more aware of environmental issues, can defend their works as fully understand the problem and see the ways out [12, 218].

In the light of the above reviewed scientific literature we are going to expose via our study the attitude of primary school teachers to project-research activity and their implementing it in the classroom.

The purpose of our study is to find out whether primary school teachers can organize project- research activity or not. Of course, primary school age imposes natural restrictions on the organization of project-research activity, but it is necessary to start involving primary school students in project activities. To addition to what we have discussed above, the fact is that it is in the early school age that a number of value attitudes, personal qualities and relationships are laid. If this circumstance is not taken into account, and considered as insignificant, "passing" for such activity, then the continuity between the stages of development of the educational and cognitive activity of students and a significant part of schoolchildren is violated and it is not possible to subsequently achieve the desired results in project-research activity. Obviously, when organizing project-research activity at primary school, it is necessary to take into account the age and psychological, physiological and

hygienic characteristics of younger students. Implementation of project-research activity is very serious and challenging, it requires from primary school teacher deep knowledge for consulting children in a certain field of science, a good command of methods for performing this activity. The main function of the teacher is to involve children in an exciting for them work and reflective activity for their learned new things and done work.

The involvement of younger students in project activities teaches them to think, predict, foresee, and forms an adequate self-esteem. But to what extent are primary school teachers able to organize their project-research activity?

Materials and methods. The methods chosen were justified to approve that primary school teachers understand the importance of project-research activity at the very elementary education level and organize project-research activity in their schools.

Having studied Regulatory documents and requirements for primary school teachers, in parallel, the survey was conducted. It was done among primary school teachers in order to find out whether primary school teachers are engaged in project-research activity or not, and the nature of their attitude towards it. The study involved 117 primary school teachers in the Zhetysu region, including city, district and rural schools. The questions were compiled by the authors on the online platform www.surveymonkey.com:

1. What type of school do you work at?
2. Indicate your age category.
3. How many years have you been working at the school?
4. Is there project-research activity at your school?
5. Have you ever done project-research work at school?
6. If you are engaged in project-research work at school, how do you feel about it?
7. What do you think prevents teachers from doing project-research work at school?
8. In your opinion, how important and necessary is it for a primary school teacher to be engaged in project-research work?
9. If you do project- research work at school, do you involve students in this?
10. Do you think that project-research activities should be developed at primary school?

The survey allowed us to identify some problems.

Research results. The research random sample consisted of 117 teachers from Zhetysu region of the Republic of Kazakhstan. The results showed that teachers from rural schools 70% actively participated in the survey, while urban schools accounted for only 20%.

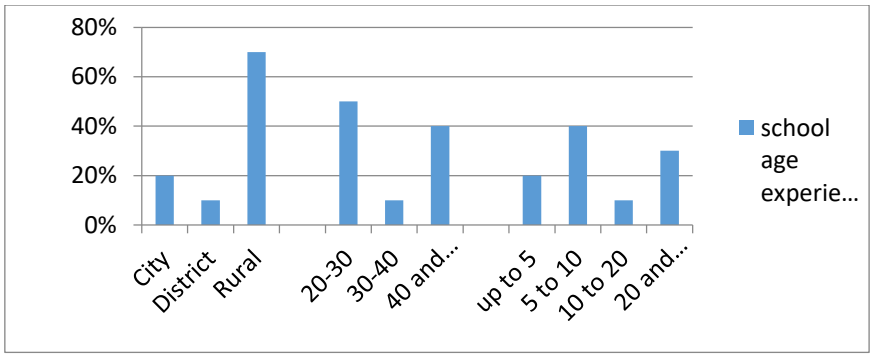

Figure 1 – Participation of primary school teachers from different types of schools

The professional characteristics of the primary school teachers are represented by their age and teaching experience. Regarding age, the young age group from 20-30 years old (50%) and teachers of middle and older age from 40 and above (40%) outstripped.

The results with the age is in contrast with the analysis of the European Commission, due to their results most of teachers in Bulgaria, for instance, are over 50 years. https://ec.europa.eu/commission/presscorner/detail/bg/IP_13_357. The middle age group showed passivity, only 10% took part. Respondents have different work experience from 0-5 years to 20 or more. It can be argued that the sample was made up of experienced teachers, 40% of the respondents have 5-10 years of experience and 30% of teachers have worked in schools for 20 or more. It can also be said that all schools are engaged in project-research activity, all 100% answered “Yes”.

However, an interesting fact is that in all the surveyed schools they organize project-research activity, but not all primary school teachers are engaged in such activity. Most (60%) have never been involved in project-research activity. There is a big problem here, if the students of the primary school go the secondary one by the "pass" method they will not acquire project and research competencies. Scientists-teachers who study the problems of project-research activity have already made a discovery, it turns out that at primary school, 30% of students give out "adult" products, if project-research activities are properly organized, and in high school, only 10%. Therefore, it is really significant to teach children from primary school to independently complete projects and participate in research. Teach them to give out finished products and come to some kind of result, to be able to defend their product in front of an audience.

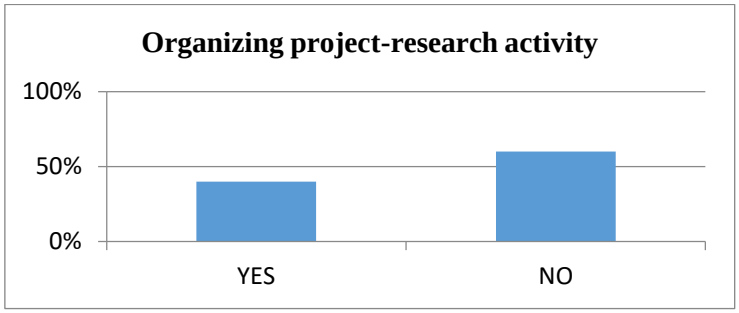

Figure 2 – Teachers' organization of project-research activity at school

The next problem that we found out as a result of the study is that 50% of teachers would like to, but do not know how to organize project-research activities.

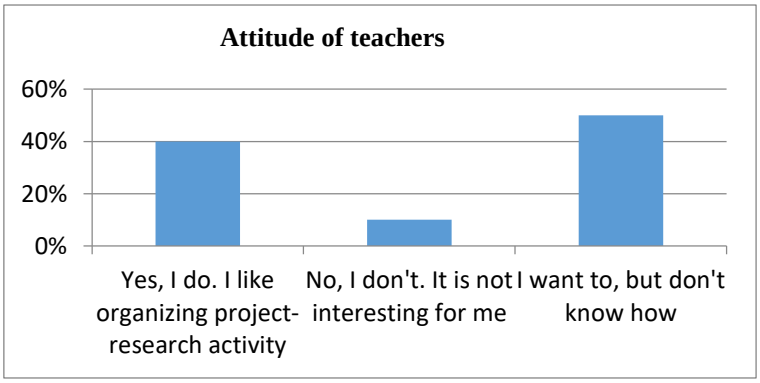

Figure 3 – Attitude of primary school teachers to project-research activity

Other factors have been found, the reasons why primary school teachers are not engaged in project-research activity. Half of the respondents refer to the lack of time and heavy workload. 30% of them for lack of knowledge of organizing project-research activity. And 20% of primary school teachers rely on lack of motivation.

One of the main steps in organizing project-research activity is motivation of both students and parents because of their constant assistance, assessment and reflection.

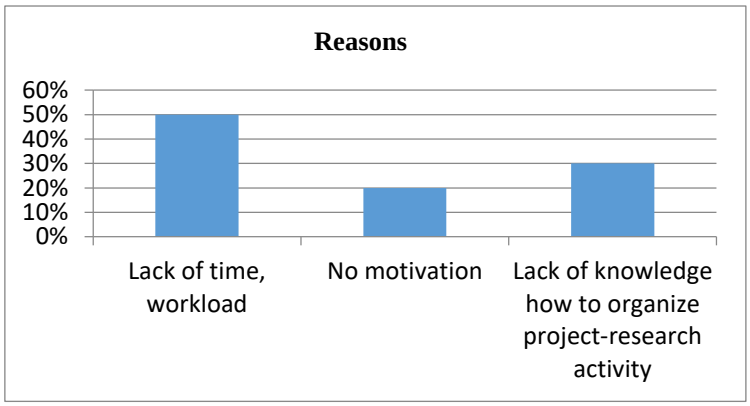

Figure 4 – Reasons of not organizing project-research activity by teachers

The need and importance of organizing this activity was stated by 90%, 10% of the participants believe that at primary school one can do without project-research activity. The percentage of involvement of younger students varies.

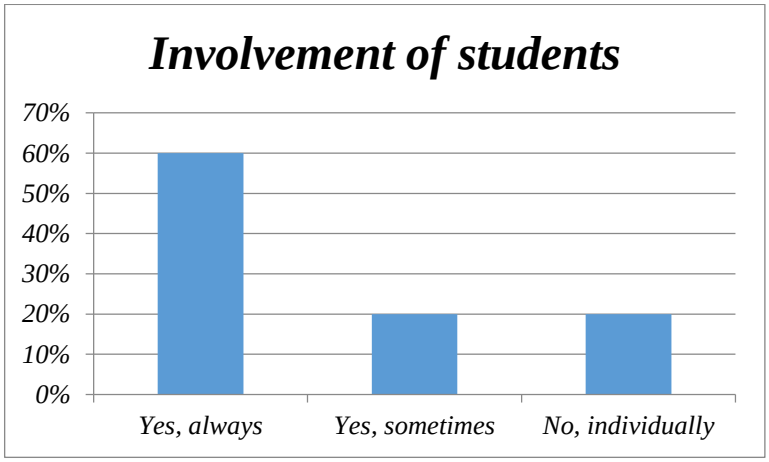

Figure 5 – Involvement of students into project-research activity

Discussion. The results of the study indicate some problems in the field of project-research activity of primary school teachers. The analysis showed the fact that there are teachers who do not engage in this activity at all and do not find it important. We believe it is necessary here to clarify the difference between the types of activities and focus on what results the ability to organize design and research activities can lead to.

At the stage of basic general education, students should have the ability to learn and the ability to organize their activities - the ability to accept, maintain goals and follow them in educational activities, plan their activities, monitor and evaluate them, interact with the teacher and peers in the educational process. The main meaning of research in education is the development of the individual, and not obtaining a new result as in science.

Project activity is a great opportunity to teach younger students to think and find the right information, solve complex problems, make decisions, organize cooperation with classmates and the teacher. The child learns to create ideas and bring them to life, to present the results of their research. The introduction of the method of project activity by the teacher at an early stage of education will help students to get acquainted with the first steps of scientific activity, their creative and intellectual development, teach them how to organize and control the project, thereby developing them harmoniously and in step with the times. After all, our whole life is a series of various projects [13, 2].

Research activity - an activity related to the solution of a creative, research problem by students and supposing the main stages related to the research in the scientific field, the acquisition by students of a functional research skill.

Students' research work can be divided into three groups:

1. scientific-research;

2. educational-research;

3. report-research [14, 10].

The organization of project- research activity is the involvement of schoolchildren in a process resembling a scientific search, built on the basis of the child's natural desire for independent study of the environment, which should contribute to his creative self-realization, the development of intelligence and critical thinking, the formation and development of research skills, the ability to independently obtain and to apply knowledge. To organize the project-research activity of younger students, it is necessary to solve several problems:

- to determine the conditions for the formation of research skills of younger students;
- to form in the parents of students ideas about project-based learning as the leading method of educational activity;
- to form in primary school students ideas about project-based learning as the leading method of educational activity;
- to create conditions for the project-research activity of younger students;
- to introduce the method of projects into the educational process, as a technology for developing learning skills [15, 300].

The activity of a primary school teacher in this direction is difficult, since not all younger students can independently carry out projects and conduct research, but it is necessary to involve students in project- research activity from the 1st grade. If we "skip" this stage, then we will not teach them to be independent and self-educate, to be proactive and creative, to find solutions in difficult situations. All these qualities will be useful in further study and practical life.

Another thing is when the teacher does not know how to properly organize project- research activity. In the psychological and pedagogical literature, various aspects and approaches to the effective organization of project-research activity of a teacher and a student are considered, but we agree with Kuznetsova T.V., who in her scientific work highlights the following problems:

- formalism in the organization of project-research activity: teachers, not understanding the essence of this technology, try to use its elements without fundamentally changing the content and forms of their work with children;
- localization of project-research activity in the extracurricular space, caused by the fact that teachers problematize its inclusion in the framework of the lessons, especially basic academic subjects;
- non-selection of the stages and content of project-research activity in relation to primary school, which makes it difficult for the teacher to manage this activity;
- insufficient level of theoretical and practical training of teachers for the organization of project-research activity of younger students and the predominance of the position of the leader in the organization of joint activities with children, which leads to a decrease in educational and educational results [16, 4].

In further research, we will try to give our own solution to the problem.

Conclusion. Project-research activity is an integral part of today's educational process, starting with preschool education. The pedagogical significance of project-research activity lies in the fact that setting and solving project and research problems is one of the most powerful motivating means of forming and developing the scientific way of thinking among students. Also, other key points are sustainable cognitive interest, readiness for constant self-development and self-education, the ability to manifest independence and creativity in solving personally and socially significant problems. As pedagogical practice shows, project-research activity is widely used within the framework of classroom and extracurricular activities within the school and beyond. To conduct educational projects and research, the school is increasingly using the personnel, material, technical and information resources of institutions of additional education, universities, scientific organizations, technology parks, technological platforms. The organization of this diverse and largely innovative activity requires a new, higher level of managerial and pedagogical culture from the school and teachers, which implies a common understanding of the specifics of educational project-research activity and the features of its pedagogical support. Due to the natural curiosity of younger children project-research activity develops cognitive interest, forms educational motivation for further studying. The teacher should provide with positive emotions and stimulate children, skillfully lead till the end of the project work. In this case the children feel happy from their research and discovery enlarging their outlook. Even initial foundation of project-research activity leads children to independent thinking, solving urgent problems, forming project and research competences, achieving results. Involving of children into project-research activity at primary school allows as we have already mentioned, to develop intellectual and creative skills of children.

Stimulation of activity, support at all phases of work are the key objectives of a teacher.

We consider the following promising directions for our further research:

1) identifying the difficulties that future primary school teachers will face in organizing project-research activities;

2) optimal ways to overcome them;

3) scientific substantiation of methodological support for the readiness of future primary school teachers for the implementation of project-research activity.

References

1. On the approval of state obligatory standards of higher and postgraduate education. Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 #. 2. Registered with the Ministry of Justice of the Republic of Kazakhstan on July 27, 2022 No. 28916 https://adilet.zan.kz/rus/docs/V2200028916 .

2. President K. Tokayev's State of the Nation Adress https://www.akorda.kz/ru/poslanie-glavy-gosudarstva-kasym-zhomarta-tokaeva-narodu-kazahstana-181130 .

3. Gerhatova Z., Perichta P., Drienovsky M., Palcut M. Temperature Measurement-Inquiry-based learning Activities for Third Graders//Education Sciences, 2021. p. 1-30. https://doi.org/10.3390/ educsci11090506

4. *Akhatayeva U. B. The evaluation of primary school teacher role on research activities//International Journal of Cognitive Research in Science, Engineering and Education (IJCRSEE), 8(3), 2020. p. 29-38. doi: 10.23947/2334-8496-2020-8-3-29-38*

5. Savenkov A.E. Method of research teaching of primary schoolchildren/Savenkov A.E. – Samara, 2011. – p. 54

6. Mohamad Syarif Sumantri, Gilar Gandana, A.R. Supriatna, Vina Iasha, Bramianto Setiawan. Maker-Centered Project-Based Learning: The Effort to Improve Skills of Graphic Design and Student's Learning Liveliness/ Journal of Educational and Social Research, Vol 12 # 3, May 2022. – p. 191-200. https://www.richtmann.org/journal/index.php/jesr/article/view/12944

7. Rumyana Y. Papancheva. Data handling and project-based learning at primary school//Journal of Process Management-New Technologies, International, Vol.5, # 4, 2017. – p.1-7 http://scindeks.ceon.rs/Article.aspx?artid=2334-735X1704001P

8. Canan Laçin-Şimşek, Aysun Öztuna-Kaplan. A study on improving the awareness of science teachers about out-of-school learning//Participatory Educational Research, Vol.9(4), July 2022. – p. 250-26. https://dergipark.org.tr/tr/download/article-file/2213241

9. Burmenskaya, G.V. Gifted children//G.V. Burmenskaya, V.M. – Slutsky. – M., 1991. – p. 269

10. Baiborodova L.V., Serebrennikov L.N.Manual for teachers of general education organization. – M.: Enlightenment, 2013. – p.2

11. Todor S. Simeonov. Blended Project-based learning for building 21st century skills in a Bulgarian School//Conference Paper "ICT for Language learning, 9th edition. – November 2016. – p.1-5 https://www.researchgate.net/publication/311650230_Blended_Project-based_Learning_for_Building_21st_Century_Skills_in_a_Bulgarian_School

12.Aydin Ozdemir. Teaching and research: establishing a link in studio-based learning//Bulgarion Journal of Science and Education Policy, Volume 1, # 1.- 2007. – p. 217-229 https://www.oalib.com/paper/2966187

13. Semikhova E.G. The essence of the project activity of junior schoolchildren, the role of the student and teacher in this type of activity // Internauka: electron. scientific magazine – 2021. # 20(196). URL: https://internauka.org/journal/science/internauka/196

14. Petrasyuk L.G., Orlova I.V., Kovalyuk S.Yu., Klyucheva E.E., Golubchikova N.N. To the teacher about educational research: requirements, organization, results// Educational and methodological manual for teachers of secondary educational institutions. - St. Petersburg, 2015. – p. 120

15. Tripolnikova N.V. Organization of research and project activities of junior schoolchildren / N.V. Tripolnikova // Young scientist. - 2019. - # 42 (280). p - 300-302

16. Kuznetsova T.V. Abstract of the dissertation for the degree of candidate of pedagogical sciences – Tomsk, 2001. – p 24.