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Organization of pupils' research in primary school

The article is devoted to the problem of the teacher organizing research activities with schoolchildren in a primary classes. The author specifies the terms «research activity», «research skills», «readiness for research». The analysis of scientific sources on this issue is performed. The article highlights important issues of scientific research activity, educational activities, characteristic of reproductive education and educational technologies. Particular attention is paid to the simple, complex, special skills and qualifications. The skills and abilities that necessary for forming pupils' interest in the research activity are fully revealed: subject competence, practical skills, organizational skills, control skills, etc. The author considers the research technology influence on the pupils' associative and creative qualities development. The work on the implementation of this technology within the scientific community «Intellect» is generalized. The methods and requirements for the projects implementation that contribute to the disclosure of pupils' abilities in the research field are indicated.

Keywords: research work, research skills, research projects, technology of research, Preparation for scientific research, creativity, research activity, subject qualification, practical skills, competence in organizing, self-control, economic and environmental competence, ways of action.

In the XXI century world civilization has risen to a new stage of development. Its evidence is intellectual schools. One of the main requirements of these schools is an innovative formation, independent thinker who has knowledge of fluent, creative, cognitive attitudes capable integrating the entire world.

In this regard, Nursultan Abishevich Nazarbayev's Address «2050: Common Goal - Common Interests - One Future»: «First, all developed countries have a unique system of education. We are expecting a great deal of work to improve the quality of all the national education. By 2020, it is planned to cover 100 % of pre-school education of children aged 3-6 in Kazakhstan. Therefore it is important to provide them with modern programs and training methods, qualified specialists. In the system of secondary education it is necessary to bring general education schools to the level of education in Nazarbayev Intellectual Schools. School graduates should know Kazakh, Russian and English. The result of their education should be the ability of students to develop a profound understanding of critical thinking, self-seeking and knowledge» [1].

The creative resilience of a person to creativity opens the way to the realization of his or her personality, when determining the creative ways of modern education. Any activity that creates creativity and makes it real but regulates creative action, defines its effectiveness. Through creative action talent develops and improves. Research-prospecting skills are available to every child. The most important task of today's education is to engage the child in research, skills and competence in researching. If it is necessary to ensure that each pupil is shaped as an individual, then it is necessary to prepare the child for the research to demonstrate the ability of the child to act differently. There are the skills to explore. However, in real school practice insufficient attention is paid to the organization of research activities of primary school pupils, including research skills.

Research is a method of production the new knowledge, which is a special form of science as a specialized cognitive activity form. Direct perception, comprehension, thinking, and more. The research suggests a clear definition of cognition purpose and instrument, and it is guided by methodological forms of results reproducibility, justification and reliability.

It separates the empiric and theoretical levels of the research. Empirical research is directly targeted and relies on observations and experiences. Theoretical research is related to the upgrading and development of the conceptual science conception. It is aimed at a comprehensive understanding of the true reality of its essential links and laws. These two types of research are closely interconnected and have one another in the whole structure of scientific knowledge. The empirical research stimulates theoretical development, identifying new data from observations and practices, and puts new tasks ahead of them. Theoretical research opens new perspectives for predicting and clarifying the facts, guiding and directing empiricism, with the development and refinement of science theoretical content.

Empirical research and the logical processing of its results are the main tool for the formation and scientific knowledge development at the empirical stage of science development (eg, practical, natural science XVIII, XVIII, partly XIX century). At this stage, however, the adjusting materials basics and classifying the cognition empirical materials are the perfection and development of scientific abstractions. The main science conception further development leads to the emergence of logical forms (eg typology, initial interpretation schemes, models, etc.) that empirically derive from the general conclusions and comparison. The formation of a completely differentiated integral theoretical system leads to the emergence a unique theoretical model of sincerity. These kinds of cognition give rise to the relative empirical level of the study, and its heuristic ability extends. Expanding the theoretical content of science and building multilateral theoretical systems leads to a clear isolation the theoretical knowledge of scientific cognition from its empirical basis, which in turn causes the need for empirical interpretation of the theory and the theoretical interpretation of empirical data [2].

The difference between the design and the organization is that the kind of «polite» service, its main purpose is to «verify» the truth, to control the object without interfering with its internal life. «The ability to develop research ability without discriminating the need for the development of human-oriented transformation skills (above all, design skills) is considered to be the most important task of education as a tool for evaluating possible research». – A.V. Leontovich.

Source of research is the aspiration to the knowledge of human nature.. «Science is born a sense of the surrounding world». A. Engelagardt emphasized that «the instinct for continuous search is to reduce the uncertainty of the instinct in every person's consciousness». The research appears as an act of action in the form of non reflexes in animals. Thus, P.Tayer de Chardin suggests that many animals refer to «an interest in the environment, which is pleasure-pleasing».

An inexplicable study of human beings, which has no external impression, is a powerful tool for the development of truth, always with him, regardless of his abilities and social status. But it is sparse, unrecognized. Only by the emergence of science and science research is a phenomenon of culture, it acquires its own history and methodology. With the emergence of science, the main type of activity is separated from the individual social group of scientists.

The leading value of the research is the value of the truth-shift process. That is why research is the main tool for the scientist developmen who strives to create the most realistic image of the world. V.N. Vernadsky, a classic of Russian and world science, says: «Science is a complex social work of the greatest, unique, comparable humanity, which is universal in its literature and art, it is in a universal character. This is a general social education because it basically consists of scientific facts and the general conclusions that are equally valid for all».

The modern era requires not only the knowledge gained from individual disciplines in the learning process but also on the whole world of thought and outlook based on a comprehensive knowledge and experience of creative life.

Nowadays, the pupils scientific community is an accessible type of school research organization. Pupils' Scientific Society (PSS) is made up of young, diverse, highly intelligent and creative pupils. The main function of the PSS is to extend pupils' interest in scientific research, to develop research skills and abilities, to work with literature, and so on. The teacher is supervised by the PSS. Leading teacher organizes training classes, organizes collective project topics, collects conclusions, and monitors the work of young researchers. This will allow them to identify talented children and develop their creative abilities through science. However, these activities are only 10 of the schoolchildren, and the rest are trained in passive learning situations

Scientists offer a variety of ways to develop students' research skills. For example, A.G. Iodko believes that the main ways of developing students' research skills in the learning process are to: clarify the set of research and development skills, identify the structure of studies involving studies, find the tools of diagnostic research skills, and use the methodologies [2]. O.I. Mitrosh demonstrates the following as part of the research skills development process: value-added approach to creative self-employment; involvement of students in various types of group and independent research activities; purposeful development of logical thinking; reflection on their activities. Mitosh O.I. as well as specific stages of research and development activities: analysis of relationships and connections between the phenomena under consideration; research task; promotion of hypotheses; solving research problems by theoretical basis; Group (collective) analysis of the correctness research problem [3].

The research activity serves as a means of adapting to people's lives in the history of humanity, performing cognitive and changing functions, and solving the problem, puts certain problems before the

person and tries to find their solution — new knowledge. This is called the cognitive function. It can happen both in everyday life, in scientific practice and in educational activities. This is the case for children at school. Research is one of the most important types of younger pupils' activities, so the child is always in the same situation as the child does not know the way to get the desired results, or the absence of the necessary information for any reason.

It is also essential to develop research skills to successfully cope with the cognitive situation. We need to develop such skills in elementary school, because at that time, children often encounter cognitive situations requiring not only ordinary, everyday decisions, but also research and cognitive activities. And the readiness of the pupils to be able to carry out educational research, the actual training means that we have the degree of literacy, the knowledge and skills that a pupil has in the research work, and how he uses them in the research practice.

Increasing the research skills of primary school pupils is one of the most pressing issues of modernity. Rapid development of all science branches, technical progress, acceleration — all contribute to deeper theoretical thinking of the undergraduate. The teacher's task is to reach a high level of mental development, which is age-specific, with the maximum use of the pupil's development prospects.

Science and education are in close contact. Education — Provides the level of knowledge and intelligence shields required for studying science. Science provides a new knowledge of the world, which is the content of education.

But it seems to us that there are differences between them lately. Education is in the process of reproductive education, and science needs discovery. The direction of pupils research activity development is actively developing in the opposite educational technology of reproductive education. This is a very interesting and necessary aspect for pupils, teachers and parents. It helps primary schoolchildren to engage in learning, broaden their outlook, raise their cultural background, prepare for the future education, and, most importantly, to raise their intellectual activity, as well as increase the efficiency of their studies. All of these are praiseworthy responsibilities, but here are some of the most important issues that are met by teachers and educators:

1. Teachers have forgotten that research is a voluntary act, and obliges students with the ability to perform the performance of their research. Of course, the first step may be due to the reputation of the teacher other external influences, but the actual research should be based on the pupil's own needs.

2. Many teachers may not understand the difference between the two types of activity. Pupils' research activities has aimed at solving the problem independently, with the research nature of the work that performed. And self-organization of educational activities — the pupil independently receives any knowledge beyond the academic discipline and in the form of an abstract. This work is intended to develop and extend pupils' knowledge of the subject, but they are not of a research nature [4].

By conducting research, the student is motivated by the cognitive ability, the desire to master life, and the desire to learn. On the basis of the research, three troopers have a positive mood, a close relationship, a hard work, and attempts to see the results of that work.

At present, the science is divided into 4 types of qualifications: simple, complex, special and versatile. Many of them are developed in the field of scientific work. A well-educated schoolchildren feel comfortable and seek independently, can independently work with the literature, set goals, and strive to do it.

The pupil needs to be interested in science to join the scientific work. By developing discipline qualifications, you can create an interest in the subject. And the subject qualification is formed during the research, analysis of the science basics. To the types of discipline qualifications: self-study qualification - supplements the student's knowledge. Here the pupil will have the necessary textbooks, materials, etc. he finds himself. Practical qualifications – practice and theoretical knowledge of research activity. Knowledge and learning the principle of construction of appliances and equipment used in every field. Organizational competence - The pupil can plan his work, organize the workplace and use the right time for his assigned job. Self-trainee qualification - the schoolchildren exercises timely and timely execution of the training. Economic and environmental competence is focused on careful consideration of the environment with environmental considerations. In this way, pupils' research skills are based on shingles - and are particularly relevant for organization of work aimed at educating sensual-value relationships in creative solutions and solving new problems [5].

One of the ways to involve students in research at elementary school is based on literary studies. The fact that schoolchildren are engaged in research is a matter of our time. The primary orientation is focused on the research work of pupils in basic subjects at secondary school.

The topic of the research work is to determine the level of teachers' leaders by teaching them the methodological basics of the research, the use of realistic texts. Secondary school student is tomorrow's student, undergraduate, doctor of science. This is an indication of the continuity of education and research work in the world civilization that develops research and research skills at all levels of pupils learning.

In order to develop the individual, it is important to relate their varied activities to the study of the actual phenomena and familiar objects around them. Research skills and abilities are needed not only for people who are engaged in science, but also for the work of individuals in various fields. Creative competence is directly related to any business. The research is now a narrow specialized service, not just a particular group of researchers, but also a way of life that is contemporaneous with the way of contemporary life, its professionalism.

This is our opinion in the seventh article by Abai: «A young child is born of two different births. The first one is that if I eat it, I sleep, the second one says, «I'll see if I know», whether dogs bite or livestock, «why does it bark», «what does it mean?» And what he hears, will not see it», the statement concludes.

The most important task of today's education is to engage the child in research, skills and competence. If it is necessary to ensure that a pupil is formed as an individual, then it is necessary to prepare the child for the research to demonstrate his or her capacity.

Throughout the lesson, there are some things that can be done to arrange research and exploratory activities of pupils by using effective methods. One of such noble intentions is the organization of pupils' intellectual society «Intellect» in primary school. In the primary school children' scientific community was opened and the pre-school and 1st and 2nd classes were connected with humanitarian disciplines on the subject, and 3rd and 4th grade learners began their research projects at their own levels.

In our lessons, pupils carry out a full cycle of research. When choosing a subject matter first, school children should have the opportunity to be able to see what they are interested in. Its objective is to provide a preliminary explanation of the selected substance and prepare a summary report. How do we work? Of course, this type of work is complicated and new for younger learners. There are many ways to find information (for us it is called research methods), and explain to them.

We started with simple questions such as: «What do you first need to do? Where do researchers begin? «In the course of the discussion, children will learn the most basic techniques: «Reading From Books», «Hand-held», etc. After every answer you should praise the student and put a card of the same method. In the course of this work, a chain of students' research is created (children do not speak, the teacher must say). In our experience, pupils offer the same techniques as «Experiment», «View From Computer», «Ask a Question for Professionals» and «Track», and do not forget to say «I need to think». So, we have a plan of research.

To get started, you need to negotiate the fixing methods. The information collected is hard to memorize, so it is necessary to give them a mark (pictographs for us). The labels may vary: images, symbols, and more. When capturing the received information with a pictorial recording, we control that the pupil works with different sensor paths (hearing, sight, smell, etc.). Thus, the effects of pictorial writing are considered to be unforgettable and valuable information for the learner. We should not dwell on the beauty, improvisation, the goal - to teach the primary school children to make these signs fast and self-explanatory. In transforming these characters, the pupil's associative and creative qualities immediately influence his development [6].

After collecting all the information, the researcher will present his report. At the same time, if the researcher is wearing an academic headdress and mantle, they will feel themselves as educated scientists. Of course, each report is related to the general development of the learner: his / her language, ability to communicate, vocabulary, communicative abilities. After the talk with the audience, discussions and questions are raised.

The schoolchildren of the 3rd and 4th grades were deeply involved in research work and protected their research projects at their own pace. After all, research skills and abilities are needed not only for people who are engaged in science, but also for the work of others in various fields. Creative competence is directly related to any profession.

Thus, at the primary school, we need to help the pupils continue to pursuit science and technology, to reach their dreams, to find their own way, and to discover their abilities by leading them to science.

The research topics were selected in September in connection with the pupils' interests. At the beginning of the year, the following questionnaires were summarized and the topics were given to determine the areas of children research interest. The themes were tried by the learners themselves.

Different work topics can be divided into 3 main groups.

1. Fantastic themes are the creation and protection of imaginary objects that are not present in life. For example, creating a magic plane or machine from cardboard, residual boxes.

2. Empirical themes — share their experiences with the experiment. In the course of this study, he opens a new world story for himself. Objects of the research: people, pets, natural phenomena, etc. may be. For example, a 3rd year student has studied the peculiarities of nutrition in his classroom and has proven the harmfulness of carbonated beverages.

3. On theoretical themes — the work of a primary schoolchildren collecting the facts from the theoretical publications and getting a final expertise. As an object of the research: inquiries with other people - opinions, reading in books, work with encyclopedias. For example, a pupil of the 4th grade has done a lot of research in archive documents in his work «My city».

Based on these 3 groups of themes, pupils can identify individual, specific topics. For example: Place of Kazpost in the context of globalization, History of Kyzylzhar mosques, Why is Albinos red? etc. The most difficult of all researches is theoretical topics. These topics are often selected by talented pupils.

After the theme has been approved, the work will be completed within 6 months and pupils will monitor, analyze and correct each work in their group. In March the research will be protected. With each child, the class leader (supervisor) provides advice.

Basic requirements to the structure of the report:

The report consists of title pages, content, introductory chapters, main sections, conclusions, bibliographies, trailers.

1. Theme: The topic of the work should be clear, short. The theme and content should be combined.

2. In the introduction, the relevance of the research (what is important, what is needed, why you choose this topic, what material is insufficient), and the purpose of the study.

3. The main section:

The main section may consist of several chapters. The contents should be opened. Investigating some literature, the author expresses his own thoughts. describes the problem in detail.

4. Conclusion section:

In the final section the main idea of the topic is summarized. The goal is achieved, the missing, the suggestions will be made.

5. The list of references is fully written.

6. Attachment:

Attachment displays additional materials (illustrations, drawings, charts, etc.).

7. Report:

Volume of the report 5 - 6 pages. The report 's evaluation indicators are explained to the students in advance (Table).

T a b l e

Evaluation of the report

№	Indicators	Rate (points)
1	Relevance	0-10
2	Science	0-5
3	The problem of knowledge	0-10
4	Theme and content compatibility	0-10
5	Personal merit of the researcher	0-10
6	Being able to use the material correctly	0-10
7	Subscription style	0-5
8	Art painting	0-5
9	Ability to report (defense skill)	0-5
	Overall score	High level — 60–75; High to high level — 46–59; The middle level —45–37; Low level — 36 lou

As shown in the Table indicators are explained to the pupils in advance. It is clear that the conference is of paramount importance. Primary schoolchildren will be able to learn, analyze and communicate their stories to the audience.

So, research is now a narrow specialized service, not just a specific group of researchers, but also a way of life that is contingent on the way of today's life, in line with its own vision of professionalism.

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Бастауыш сыныптарда оқушылардың зерттеу жұмыстарын ұйымдастыру

Мақала мұғалімнің бастауыш сынып оқушыларымен ғылыми-зерттеу қызметін ұйымдастыру мәселесіне арналған. «Зерттеу қызметі», «зерттеу дағдылары» және «зерттеу дайындығы» терминдерінің мағынасы түсіндіріліп, осы мәселені зерттеген ғалымдардың еңбектері талданған. Репродуктивті оқытуға қарама-қарсы білім беру технологиясы арасында кездесіп отыратын ғылыми-зерттеушілік іс-әрекеті және оқу іс-әрекеттерінің маңызды мәселелері атап өтілді. Қарапайым, күрделі, арнайы және жан-жақты біліктіліктердің ішінде жан-жақты біліктілік ерекше қарастырылды. Оқушының ғылымға деген қызығушылықты ояту үшін керек пәндік біліктілік, өз бетінше іздену біліктілігі, практикалық біліктілік, ұйымдастыра білу біліктілігі, өзін-өзі бақылай білу біліктілігі, экономикалық-экологиялық біліктілік және оқушылардың зерттеушілік біліктерге негізделген іс-әрекет тәсілдері жан-жақты зерттелген. Мақалада «Интеллект» ғылыми қоғамы аясында ұйымдастырылған оқушылардың ассоциативті және шығармашылық қасиеттерінің дамуына әсер ететін зерттеу жұмысының технологиясы сипатталған. Оқушыны ізденушілікке баули отырып, ғылымға қабілеттерін ашуға көмектестін жобаларды жоспарлап-өткізу тәсілдері және оларға қойылатын талаптар келтірілген. Авторлар бастауыш сынып оқушыларын шығармашылық ізденушілікке жетелейтін ғылыми қоғамның жұмысына қорытынды жасайды.

Кілт сөздер: зерттеу жұмыстары, ғылыми-зерттеу дағдылары, ғылыми жобалар, зерттеу жұмысы технологиясы, ғылыми-зерттеу жұмыстарын ұйымдастыруға дайындық, шығармашылық ізденушілік, ғылыми-зерттеушілік іс-әрекет, пәндік біліктілік, практикалық біліктілік, ұйымдастыра білу біліктілігі, өзін-өзі бақылай білу біліктілігі, экономикалық-экологиялық біліктілік, іс-әрекет тәсілдері.

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Организация исследовательской деятельности учащихся в начальных классах

В статье проанализированы психолого-педагогические труды ученых по сущности понятий «исследовательская деятельность», «исследовательские навыки», «готовность к исследовательской деятельности». Отмечены важные вопросы научно-исследовательской деятельности, учебных действий и образовательных технологий, характерных для репродуктивного обучения. Особое внимание уделено рассмотрению простых, сложных, специальных форм совершенствования квалификаций, где всесторонне раскрыты действия, способы и специальные навыки и умения, необходимые для формирования интереса учащихся к исследовательской деятельности: предметная компетентность, практические, организационные навыки, экономико-экологическая исследовательская деятельность учащихся, а также

умение контролировать и др. Авторами показано влияние технологии исследовательской деятельности на развитие ассоциативных и творческих качеств учащихся. Обобщена работа по реализации данной технологии в рамках научного общества «Интеллект». Указаны методы и требования к реализации проектов, способствующих раскрытию способностей учащихся в области исследований. Авторы обобщают данные по работе научного общества, ведущей к творческому поиску учащихся начальных классов.

Ключевые слова: исследовательская деятельность, исследовательские навыки, исследовательские проекты, технология исследовательской деятельности, готовность к организации исследовательской деятельности, творческий поиск, научно-исследовательская деятельность, предметная компетентность, практические навыки, организационные навыки, умение контролировать, экономико-экологическая компетентность, способы действия.

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