

FORMATION OF MOTIVATION FOR RESEARCH ON THE BASIS OF INFORMATION TECHNOLOGIES OF PRIMARY SCHOOL STUDENTS

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Abstract: The article touches upon the issue of formation of motivation for research of primary school students, in which the main significance highlights an important thing – information technology.

Each student as a member of developed society on present demand must be harmoniously knowledgeable, striving for innovation and change, capable of self-evaluation, self-control and self-realization and defend their points of view in society.

Primary school differs from the secondary school in that, it discloses the characteristic abilities and talents of each child, aspires them to creativity, knowledge and ambitious action. It inspires students to research activities.

Research of students in primary school - children's creative activities aimed at discovering new knowledge and methods of action. It creates conditions for the development of intellectual and creative potential of the child, promotes to activate them, the formation of interest in the researched material, and facilitates the formation of the object and general skills.

In connection with the above, we have a goal - to promote motivation for research on the basis of information technologies and theoretical substantiation this problem, carry out experimental work, using techniques such as analysis, synthesis, generalization, and with the help of survey, diagnosis, various practical works and training and to achieve our goals.

Keywords: Motive, motivation, study, research, information technology.

INTRODUCTION

In connection with entry into the XXI century –a century of new educational paradigm – requirements for the development of individuals, who are capable of solving complex issues, willing to think efficiently and engage in research actively are growing. Nowadays, the dynamic changes are taking place in society. Therefore, everyone should properly accept these changes and, accordingly, constantly activate own research potential.

THEORETICAL FRAMEWORK

In the “Requirements for Educational Activities” of state compulsory standard of primary education there is stated: “The purpose of primary education is to create a favorable space for formation and development of a harmonious personality of students, who possess the following basis of broad skills:

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1. the ability to use knowledge creatively and functionally;
2. the ability to think critically;
3. the ability to conduct research;
4. know the information and communication technologies;
5. possess a variety of communication methods, including language skills;
6. possess skills to work in a group and individually” (State conventional compulsory standards of primary education RK MZHBS, 2008).

From this we can make this conclusion: for today, the main purpose of primary education is not only strengthening students with the knowledge, but also the formation of their general learning skills, competence, the main task is to create conditions for a harmonious multilateral development of the individual student. For this purpose it is necessary to disclose any of the abilities of each child and develop them. All children are naturally inclined to research, study, and directed to the self-realization. One of the means of disclosing and developing of children’s abilities is a research.

We define the research of students as a joint creative activity of two subjects (teacher and pupil) in the search for solutions of the unknown, as a result of which the transmission of cultural values realizes (Materova 2000). In this case the teacher acts as the organizer of the research. In solution of this problem it is not enough If students just make a decision, there is a need their decision to be beneficial for someone. From this point of view, there is a problem of formation the motivation for the development of those abilities.

RELEVANT LITERATURE

The problem of research was theoretically founded by Ya.A. Komensky (2015), Zh.G. Russo (1982), N.I. Pirogov (1993), K. Ushinskiy (1988) and national scientists Sh. Taubaeva (2001), Z.A. Isaeva (1989), and the problem of motivation was investigated by T. Tazhibaev (1993), A.V. Leontovich (1999), N.F. Talyzina (2007), G.T. Daulbekova (1996) M.M. Akizhanova (2005), E.R. Nurtaev (2013).

Modern, the most effective means of formation the motivation for research is an information technology. Among foreign scientists P. Bepalko, V.V. Davydov, Yu.S. Branovsky, A.A. Kuznetsov, A.Yu. Uvarov, E.I. Mashbits, V.E. Monahov, V.A. Sadovnichii, T.A. Sergeeva, E.S. Polat, V.V. Guzeev and etc. investigated the usage of information and communication technologies in the learning process, problem of universal computer literacy, its value, the content of teaching were considered in the works of Ya. Vargamensky, S. Grimm, A.P. Ershov, and G.B. Kochetkov and other scientists.

The main directions of the process of informatization of society and education, development of information competence of teachers were studied by K. Platonov, N.V. Kuzmina, A.K. Markova and others.

The purpose, content, principles, psychological and pedagogical bases of preparation of teachers to use ICT in the learning process in accordance with modern requirements were examined in the works of Kazakhstani scientists as A.N. Kazmaganbetov, M. Baymoldaev, G. Nurgalieva, D.N. Kulibaeva, B.A. Almuhambetov, E.Y. Bidaybekov, T.O. Balykbaev, M.G. Kalamkaliev, S.T. Muhambetzhanova, A.E. Sagymbaev, G. Nurzhanova, A.B. Medeshova, N.T. Ermekov, N.T. Danaev and others.

The concept of information technology has been studied in the works of national scientists as S.Zh. Praliev, E.Y. Bidaybekov, G.A. Severo, S.M. Kenesbaev, S.A. Abdymanapov, S.B. Baymuhanov, M. Zhusubalieva, the settlement of Kara, S.Yu. Karpova, S.S. Kunanbaeva, D. Sydykov, A.A. Zholdasbekov, M.S. Malibekova, A. Amirbekov, G.Y. Sardarova, S.K. Abdibekova, G.S. Bazarbaeva and etc.

Problems of the organization and improvement of educational process in primary school were reflected in research of A. Amonashvili, Davydov, L.V. Zankova, S.N. Lysenkovoy, N.F. Talyzinoy, V.F. Shatalova, BA. Aldamuratova, Y. Namazbaevoy, S. Dzhakupova, A.R. Ermentaevoy, N.G. Toksanbaevoy, M.G. Bapaevoy and etc. (Uyadullakzy 2014).

Thus, with the help of the conducted analysis of literature, we found out that although the problem of formation of motivation for research has been investigated, but there was insufficient study regarding the problem of formation of motivation for research through information technology, as the assimilation the information technologies was considered as a second-order literacy.

On this basis, such contradictions can be identified:

- Between modern pedagogical paradigm, which provides information technology as a means of development of students and in first place puts the development of the creative personality of students and orientation of teachers, mainly in the formation of knowledge and skills;
- Between the need for the formation of motivation for research on the basis of information technologies of primary school students in the modern pedagogical conditions and lack of scientifically-based and practically established relations to solve this problem;
- Between the increasing volume of research of primary school students on the basis of information technologies and theoretical failure of detective conditions for the development of student.

Therefore, we set such a goal: to determine the theoretical and methodological basis of formation of motivation for research of primary school students on the basis of information technologies, and to produce a methodology and to prepare scientifically-based proposals in the course of experimental work.

We suppose that, if formation of motivation for research of primary school students on the basis of information technologies is theoretically being founded

and a technique is being developed, the conditions, which are necessary for the effective conduct of the process, will be created, since motivation will catalyze the formation of primary school students as the researchers.

State general obligatory standard of primary education requires teachers to involve students in research activities from primary classes: in grades 1-2– to give available creative tasks; and in grades 3-4 - to fulfill more complex individual and group research (State conventional compulsory standards of primary education RK MZHBS, 2008). Teachers' functions: to organize, promote, correct research works, i.e., to incite children's interests in the subject of study, to involve them in research, to explain its importance during the realization of their research, to encourage students to show their achievements.

We believe that the research interest is personal quality, individually for each child. Teacher must keep and develop supporting him. So, in order to show their talents, children need a control by adults. The most important source of formation outlook of children is a research.

If you go through the various sources of information, in the free encyclopedia of Wikipedia the concept of "research", "research activities", which effectively influence on the learning process, has such definition: "a research (a direct translation of "search inside") in the broadest sense is the search for new knowledge with the aim to establish the facts and system of revision. In the narrow sense - scientific method (process) in the study anything." (Ozhegov and Shvedova 2006, p. 312)

A.V. Leontovich believes that the research is an activity of students, associated with the solution of creative, research tasks and consists of such basic steps as the formulation of the problem, to explore the theme theoretically, to select the methods of research, to implement them in practice, to choose an information independently, to analyze and summarize (Leontovich 1999, p. 9).

A.S. Obuhov considers research activities as a creative process, in which the joint activities of the two people are implementing with the aim to find solutions, and providing for the formation of outlook through transmission of cultural values (Obukhov 2008, p.17.).

A.I. Savenkov calls research activities as special kind of intellectual and creative activity, which is carried out as a result of the actions of the active search mechanisms aimed at the study (Savenkov 2007, p.14). In our opinion, this is the most important action of the teacher, that must be constantly taken place in the learning process.

The basis of the involvement of students in the study can be seen in the works of many teachers humanists. Ya.A. Komensky (2015), Zh.Zh. Russo (1982), N.I. Pirogov (1993), K. Ushinskiy (1988) and etc. They theoretically substantiated the issue of research.

In pedagogy and psychology concept of “research training” is used in the sense of a method of learning that is based on the true aspirations of the child to cognize the environment by himself. Its main goal is to form the ability independently and creatively, to assimilate new modes of action in any sphere of human culture (Slobodchikov 2006).

In order to practice in research some incitements help junior students. With this aim, we consider the essence of the concepts of “motive” and “motivation”.

Motive - is:

1. The reason, promoting any actions, encouraging; argument in favor of a subject;
2. Subjective evidence (conscious or unconscious) of human action, any behavior; psychic phenomenon, directly ensuring the implementation and the choice of a mode of action;
3. The student focus on the action or the individual’s actions and intent, related to the internal relation to satisfy any needs.

Motivation - the entity of all the permanent motives, intentions, defining the content, orientation, nature of the actions and behavior of the person (Tuymebaev 2009, p. 191-192).

In the free encyclopedia Wikipedia it is stated: “Motivation - psycho-physiological process that controls the action of man, directed at activities, ambition and stability, capable to meet the need” (Free encyclopedia), and in great psychological encyclopedia: “Motivation - a boost for the manifestation of the body’s activity” (Most psychological encyclopedia under edition of Dubenyuk, 2007)

Significatives of students’ need in research:

1. active work with the material, identifying ways to work, ability to convert it;
2. returning to work after receiving the results;
3. comparing several ways of getting results;
4. striving to analyze rather than getting a quick result.

External motivation of students to research:

- Utilitarian (the application of knowledge in practice);
- The degree of social identity (wait for praise, encouragement, recognition, expert evaluation) (Semenova 2006).

Foremost, the student’s internal motivation for research, creativity will form, arising in any life or scientific problem. From this the most important task arises, it is to find ways of formation of intrinsic motivation, i.e., to change the external motivation with intrinsic motivation in order to find ways to solve uncertainty.

In the organization of the system of research all efforts should be focused not on preparing students for adult life in the way of science, not on the development of any skill, not for receiving a specific knowledge, but precisely for this problem - the formation of motivation. A thing mentioned above is only the result of the first task - the successful formation of interest for research.

It is necessary to pay attention to the following characteristics of students who are prone to the research:

- High aspiration to implement the work;
- A strong desire to develop new knowledge and skills;
- The ability to analyze, synthesize the information received, to sum up;
- The desire to prove a point, even if this opinion does not coincide with the opinions of others;
- The desire to compete with other children in a particular activity (Adamova 2012).

Thus, research is consisted of not only the search and processing of information, but also generalization, expressing their thoughts, results and the ability to defend it to his friends.

Types of research:

1. Teaching and research - independent creative activity of students, aimed at solution research problems, in which the personal development of students and the formation of research abilities are implementing.
2. Research design activity - firstly, allows you to link theory with practice and with the level of training students, and secondly, to unite the interest of schoolchildren, and thirdly, to achieve a high level of learning.
3. Research work - independently and creatively engaged in research work.
4. Research practice - activity of students in the conditions requiring the relationship to research. Its goal is the formation of research skills and knowledge in dealing with matters of public interest (Rasskazova 2014).

Thus, children do not discover the news with their researches, but through the “opening novelty for themselves” they develop a pro-active life attitude. Research teaches young researchers to work with different sources of information, do the analysis. Students as active subjects participate in the cognitive process, structure the research problem, plan the ways to solve it, collect and draw up the necessary information, analyze their actions, conclude, learn new knowledge and form research skills and abilities. Research is characterized by the emergence of the cognitive needs of students, self-government and allow to self-improve at a high level. An important characteristic of the research-creative activity and initiative.

METHODS

Context, Participants, and Procedure

The subjects of this study are primary school teachers (120) from different regions of Kazakhstan, and primary school students (56) of secondary school-gymnasium No. 45 of Kyzylorda region.

The following methods were used to achieve our goal: an analysis of philosophical, social, psychological, pedagogical and methodological literature in terms of the problems of research, synthesis, generalization of pedagogical publications and regulations, advanced pedagogical experience, study, survey, comparative analysis, conducting an experiment, practical work, evaluation of its results, compilation and mathematical processing of the results.

ANALYSIS AND RESULTS

During the experiment we conducted a survey among teachers, members of the Republican seminar, which took place on the basis of Kazakh National Pedagogical University named after Abay.

Teachers responded to the following questions:

1. What kind of new educational technology do you use during your lesson?
2. How do you evaluate your computer literacy (1 to 10 points)?
3. Do you understand the meaning of the notion “competence”?
4. Whom do you think as “competent personality”?
5. What qualities should he possess?
6. Do you use these terms in your educational activities?
7. What is the role of ICT in today’s society?
8. What is not enough for teachers to become competent?
9. What should teachers do for formation competent students?
10. How can we use information tools in the educational process?

The result was as follows: 80% out of 120 teachers attending the seminar understand new concepts related to new teaching techniques, but do rarely use them. Only 40% of teachers know the meaning of the terms “competency” and “competence”. Information technology is known to many teachers, but only 38% of them fully realize their value.

To change this evidence, we conducted a lecture on topic “The competence of primary school teachers in the use of ICT” for primary school teachers. We gave full information regarding the topic, explained the key concepts, organized practical exercises in the form of a dispute, mini-games, individual and group works using various means of information technologies. Especially important was the fact that

the teachers were given a huge volume of new knowledge about screening tests that can be taken using a computer at any time, about the types of tests that are aimed for comparison, to establish consequences and methods of using them in the classroom. At the end of the aforementioned terms of lectures were clear to all teachers, and they took great desire to use ICT in the classroom and outside school hours.

To improve the use of teachers the information technology in the educational process, we used a specially designed visibility, as “Demonstrative table on the Kazakh language (class 2).” The peculiarity of this visibility is that each topic with important concepts and keywords opens up in the form of tables. With the help of such material students learn the subject and at the same time learn to work with different data sources.

Also the number of children interested in the research has been identified. We checked up diagnostics by comparing the achievements of students of parallel classes on research activities. As a result, we determined that primary school students are not very interested in researches and in general the term “research” is understood as being too difficult for them. If specifically, only 22 students out of 56 in 2-grade are engaged in research activities, while other students think that the research is out of their strength, and they will not be able to solve research problems.

And accordingly, we have decided to change their views and gave the opportunity to work in a group, that they have created by themselves according to their common interests. And that we aspired to form ICT skills among primary school students in research activities.

Research work consists of the following steps:

Stage I - to create their own interest groups.

Stage II - with the help of the teacher to develop a work plan, to collect material in accordance with plan, divide responsibilities among themselves.

Stage III - an independent group work:

- Search and information gathering;
- Carry out experiments;
- Processing of the collected information;
- Create new presentations using ICT.

Stage IV - Project protection (Savenkov 2003).

Each group defends his project in the form of presentation. Because in the era of information, students should not only be able to work with information, but also to defend their point of view to the public via an interactive board.

Scientific-research work, organized by them, gave a positive result: the students became more interested in the study, desired to perform work in a group and individually, skilled to work with the presentation and their belief in their strength and opportunity appeared.

For the purpose of formation in primary school students the motivation for research in practice, we have organized intellectual competitions.

During the intellectual competitions, students have adapted to the social and communicative actions, and they formed an ability to use their potential. Participation in competitions contributed to the establishment of readiness for research and with its help skills of self-realization, planning and self-control, critical thinking have been formed.

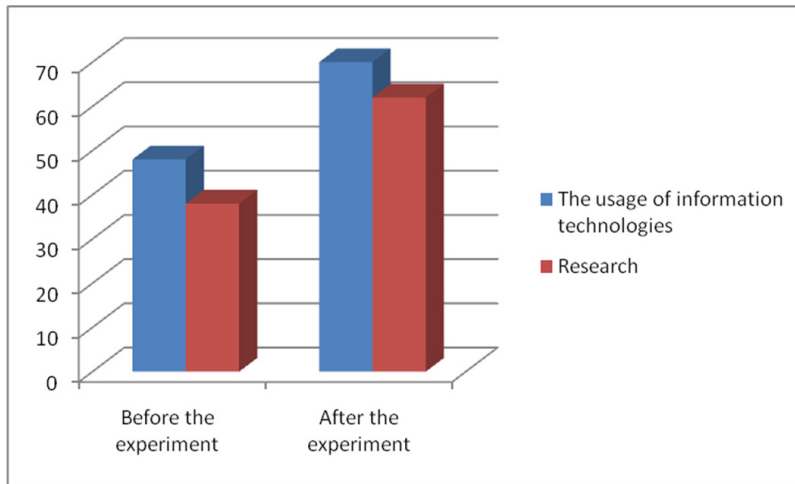


Figure 1: Comparative data on formation of motivation for research on the basis of information technologies of primary school students

DISCUSSION

In accordance with the purpose and tasks of our research, the meanings of notions such as “research”, “research activities” and “motive” and “motivation” were defined. By studying and analyzing the works of scientists we can draw this conclusion:

Further, the current state of the schools to attract students of junior classes was revealed in research: Estimate the number of students engaged in research activities, the level of their interest to the study, the level of computer literacy of primary school teachers were determined. To address these shortcomings a plan of class and extracurricular activities and experimental work were carried out.

1. According to the results of a survey of primary school teachers lecture on topic “The competence of primary school teachers in the use of ICT” was held with the purpose of increasing computer literacy.
2. To improve the result of the application of primary school teachers the information technology in the educational process, we used a specially

designed visibility, as “Demonstrative table on the Kazakh language (class 2).”

3. Comparing the achievements of students of parallel classes on research activities, we organized research work of primary school students in the form of group work.
4. To form in primary school students the motivation to research activities we organized intellectual competitions.

Limitations and Recommendations

Also except aforementioned actions, we believe that there are other kinds of work, which affect on the formation of motivation for research of primary school students. And we include the following:

- Training with children on research activities. On the one hand, because training is conducted in a free style with the whole group, jointly discussing and studying the problem, children learn to work in a group, and on the other hand, through practical work on the training topic they develop a certain skill to work as a researcher.
- Tips on the same subject for teachers and students. Tips can be taken as advice on joint work of the teacher with the students. It is always important in the educational process - the teacher, his talent, knowledge and skills. And for the development of student personality, level of ability, interests and hobbies of any advice may be useful.
- Organization and holding the Science Day. This day can be organized in the form of a conference on the most interesting scientific works of students. This is a great opportunity at the celebration of Science Day to demonstrate not only their own interests, but also, of course, intellectual ability, but also to get a great experience, as the absence of fear during a public speech to the audience. In addition, this event will enable students to get acquainted with the standards of such events, and equally important is to get recommendations on the follow-up implementation of a particular scientific work. The School Science Day allowed the tournament by conventional intellectual games, for example, in the form of answers to questions. Thus, to implement this event almost doesn't need anything, mainly you have to prepare the questions, answers, and of course, several teams. This game gives you the opportunity to develop erudition.

CONCLUSION AND IMPLICATIONS

For primary school students research activities is not only one of the methods, but also the way of forming special style of educational activity and a method for generating scientific knowledge. It replaces training on self-learning and creates self-development mechanism. Research activities contribute to the disclosure

of the individual abilities of students. Therefore, staff education and parents of students, starting in primary school should promote a personality of young researcher.

Summarizing all the pilot phase of the formation of motivation for research on the basis of information technology of primary school students, we have received a positive result.

Thus, the involvement of children in research on the basis of information technology promotes creativity and initiative at all stages of the cognitive process: starting with the study goals and objectives of the study till to apply their knowledge in practice. And if in the research children are interested in control and search of information, they will quickly adapt to training. Motivation is a major problem in training. The teacher can carry out any business at the school level, but if you pay more attention to the motivation, I think that it would be more efficient.

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