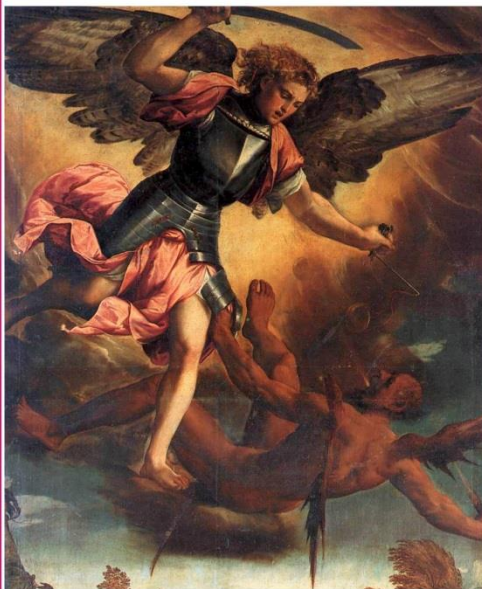


# opción

Revista de Antropología, Ciencias de la Comunicación y de la Información, Filosofía, Lingüística y Semiótica, Problemas del Desarrollo, la Ciencia y la Tecnología

Año 35, 2019, Especial N° **20**

Revista de Ciencias Humanas y Sociales  
ISSN 1012-1587/ ISSNe: 2477-9385  
Depósito Legal pp 198402ZU45



Universidad del Zulia  
Facultad Experimental de Ciencias  
Departamento de Ciencias Humanas  
Maracaibo - Venezuela

# **Building Motivation for Research in Elementary School Students**

**Akbilek P. Mynbayeva<sup>1</sup>**

<sup>1</sup>South Kazakhstan State Pedagogical University  
mutlu\_8484@mail.ru

**Nazgul T. Sartayeva<sup>2</sup>**

<sup>2</sup>Abay Kazakh National Pedagogical University, Almaty, Kazakhstan  
nazgul\_88s@mail.ru

**Serik M. Kenesbayev<sup>3</sup>**

<sup>3</sup>Abay Kazakh National Pedagogical University, Almaty, Kazakhstan  
kenesbaev\_sm@mail.ru

**Manat K. Zhailauova<sup>4</sup>**

<sup>4</sup>Korkyt Ata Kyzylorda State University, Kyzylorda, Kazakhstan  
mzhailauova@mail.ru.

## **Abstract**

The article provides a theoretical framework for the problem of the development of research skills and motivation for research among elementary school students. Using such methods as analysis, synthesis, generalization, survey, diagnostics and practical tasks, comparative data were collected that show the level of elementary students' motivation for research based on information technologies. As a result, the level of elementary students' motivation for research based on information technologies increased. In conclusion, engaging children in research using information technologies stimulates the development of creative abilities and initiative at each level of learning.

**Keywords:** Information, Technologies, Motivation, Motive, Research.

## *Creando Motivación Investigativa en Alumnos de Primaria*

### **Resumen**

El artículo proporciona un marco teórico para el problema del desarrollo de habilidades de investigación y motivación para la investigación entre estudiantes de escuela primaria. Usando métodos tales como análisis, síntesis, generalización, encuesta, diagnóstico y tareas prácticas, se recopilaron datos comparativos que muestran el nivel de motivación de los estudiantes de primaria para la investigación basada en tecnologías de la información. Como resultado, el nivel de motivación de los estudiantes de primaria para la investigación basada en tecnologías de la información aumentó. En conclusión, involucrar a los niños en la investigación utilizando tecnologías de la información estimula el desarrollo de habilidades creativas e iniciativa en cada nivel de aprendizaje.

**Palabras clave:** Tecnologías, Informáticas, Motivación, Motivo, Investigación.

### **1. INTRODUCTION**

At the turn of the 21<sup>st</sup> century – the age of new education paradigms – there is a growing demand for well-rounded personalities capable of solving complex issues, think productively and actively conduct research. Society nowadays is changing fast. Every person should treat these changes correctly and constantly actualize his or her research potential. The chapter Requirements for the Learning Process of the state elementary education standard states: The goal of

elementary education is to create a space that would facilitate building and development of wholesome personalities of students who are to master the fundamentals of the following general skills:

- 1) Ability to apply knowledge in a functional and creative manner;
- 2) Ability to think critically;
- 3) Ability to conduct research;
- 4) Knowledge of information and communication technologies;
- 5) Knowledge and ability to use several communication techniques including language skills;
- 6) Skills of individual and group work.

This leads to the following conclusion: the main goal of elementary education nowadays is not only to equip students with knowledge but also to develop their general learning skills and competences. So the main goal is to create the environment for harmonious wholesome development of a student's personality. To achieve this, it is necessary to identify talents each student has and actualize them. By their nature, all children have an aspiration towards exploration, studying and self-fulfillment. One of the means to identify and develop children's abilities is research. We use the definition of students' research as a joint creative effort of two subjects (a teacher and a student) that seeks to discover the unknown and, as a result, transfers cultural values (Materova, 2000).

The teacher in this scenario plays the role of a moderator of exploratory activities. When solving a problem, students should not only find a solution but also find such a solution that can be useful to

somebody. From this point of view, a problem of developing motivation for research arises. The problem of research activities was theorized by John Amos Comenius (Perezhovskaya, 2015), (Konstantinov et al., 1982), Pirogov (1993), and such Kazakh scientists as Taubayeva (2001) and Isayeva (1989), while the problem of motivation was studied by Leontovich (1999), Talyzina (2007), Dauletbekova (1996), Akizhanova (2005), Borhanian (2017), Saedi (2017) and others.

A modern and the most effective means of building motivation for the research is information technologies. The use of information and communication technologies in teaching has been investigated by such foreign scientists as Leontovich (1999) and others, and the problem of universal computer literacy, its importance and the contents of education has been covered in works of Pirogov (1993), etc. The main line of the society and education informatization, as well as the development of information competence of teachers, were studied by Pirogov (1993), etc. The goal, content, principles and psycho-pedagogical basis of the of teacher's education on the use of ICTs in teaching in accordance with the modern standards have been described by such Kazakh researchers as (Materova, 2000).

The notion of information technologies has been elaborated by such Kazakh researchers as (Materova, 2000). The problem of organization and improvement of the pedagogical process in elementary school have been covered in the works by Talyzina (2007) and others (Yaidyllaqyzy, 2014). Thus, the literature analysis shows that, although the problem of building motivation for research has been

studied, the problem of building motivation for research using information technologies has not received sufficient attention since the ability to use information technologies was regarded as literacy of the second sort. Based on this, the following controversies can be identified:

- A controversy between the modern pedagogical paradigm that views information technologies as a tool for student education and prioritizes the development of their creative personalities and the attitude of teachers focused primarily on development of knowledge and abilities;

- A controversy between the need to build motivation for research in elementary students in modern pedagogical environment using information technologies and the lack of scientifically proven and practically implemented relations to fulfill this need;

- A controversy between the higher volume of research activities that involves using information technologies and the lack of theoretical underpinning of pedagogical environment required for student development.

Therefore, our goal is to establish the theoretical and methodological basis of building motivation for research in elementary students using information technologies, to design a methodology and, in the course of an experiment, to suggest scientifically proven proposals. We assume that, if there is a theoretical framework for building motivation for research in elementary students using information technologies and a relevant methodology, the necessary conditions for effective education process are established because

motivation becomes a catalyst for making elementary students creative exploring personalities. The state compulsory elementary education standard requires that teachers engage students in research from their first years in school: by giving them simple creative tasks in 1-2 grades and more difficult individual and group research projects in 3-4 grades.

The functions of a teacher: to organize, facilitate, correct research activities, stimulate the children's interest in the subject, engage them in research, explain the importance of exploration, and encourage students to share their achievements when conducting research. We think that interest towards research is a typical trait of a child's personality. A teacher must preserve, support and develop it. It means that to discover their talents, children need control from adults. Research and exploration activities are the most important source of worldview.

The notion of research, exploratory activities that have an impact on the learning process, is given the following definition: Research in its broad sense is a search for new knowledge in order to establish facts and conduct their systematic verification. In its narrow sense, research is a scientific approach (process) used to study something. (Ozhegov and Shvedova, 2006). Other researchers believe that research is such student activities that are aimed at solving creative research tasks and consist of such basic stages as a problem statement, its theoretical investigation, choice of research methods, practical execution, collection and analysis of the data and drawing conclusions (Leontovich, 1999). Obukhov (2008) regards research as a creative process that involves a joint action of two subjects aimed at

finding a solution during which a worldview is formed through the transfer of cultural values (Obukhov, 2008).

Savenkov defines research as a special intellectual and creative activity performed as a result of active search and aimed at investigation (Savenkov, 2007). In our view, this is the most important function of a teacher that must be fulfilled during the teaching process. The basis for engaging students in research can be found in works of many humanist pedagogues. John Amos Comenius (Perezhovskaya, 2015), (Konstantinov et al., 1982), Pirogov (1993) and others theoretically substantiated the various aspects of research activity. A Turkish researcher Materova (2000) in her pedagogical works studied the influence of research activities on the development of language skills, whereas Tuimebaev (2009) studied the influence of research performed by elementary students on the development of their cognition and analyzed the stages of research process.

In pedagogy and psychology, the term research-based education means a way of instruction based on the natural tendency of children to explore the surrounding world by themselves. Its main goal is to let children develop their skills on their own in a creative manner and to learn new modes of action in any realm of our culture (Slobodchikov, 2006). To engage in research, elementary students need a sort of an impulse. In this respect let us consider the notions of motive and motivation. A motive is:

- 1) A reason that incites an action; an argument in favor of a particular choice;



2) A subjective proof (conscious or unconscious) of a person's action or behavior; a psychological phenomenon that enables a person to choose and execute a certain mode of action;

3) A student's intention to perform an action or individual parts of an action and an aim based on the desire to fulfill a certain need.

Motivation is the combination of all consistent motives and intentions that define the essence, focus, and character of a person's action or behavior (Tuimebaev, 2009). Other researchers define motivation as a psychophysiological process governing the human activity, aimed at activity and stability, as well as an ability to satisfy a need (Wikipedia) or "an urge for action in an organism" (Dubenyuk, 2007: 20). The indicators of school students' need to perform research are:

1) Active work with the material, determination of work methods, and the ability to transform it;

2) An opportunity to continue working after results have been obtained;

3) Comparing several ways to achieve a result;

4) Prioritizing analysis over quick results.

Students' external motives to perform research can be utilitarian (practical application of knowledge) or social (expectation of a praise, reward, recognition, or expert evaluation) (Semenova, 2006). First of all, a student develops an inner motivation for an exploratory, creative approach when solving any life or scientific problems. This presents the most important task – to find ways to develop inner motivation, i.e. to replace the external motivation with inner motivation in order to

resolve uncertainty. When organizing research all efforts should focus not on the preparation of students for adult life on their way to science, and not on developing particular skills or acquisition of certain knowledge, but on this task – development of motivation. The above mentioned is in turn merely a consequence of this first task – to effectively stimulate interest towards research. The following characteristics of students inclined to conduct research should be considered (Yang et al., 2019; Soo et al., 2019):

- Strong intention to perform a task;
- Strong intention to acquire new skills and knowledge;
- An ability to analyze, generalize information, and draw conclusions;
- A wish to prove their point of view even if their opinion differs from that of others;
- A desire to compete with other children in a certain activity.

Thus, research is not limited to search and processing of information, but also involves generalization, statement of one's ideas, obtaining a result, and an ability to defend it in front of friends. The following types of research activities were identified:

1. Educational research is an independent creative activity of students aimed at the solution of research problems during which students' personalities are developed and research skills are formed.

2. Project research, on the one hand, helps establish connections between theory and practice and a students' level of knowledge and, on the other, achieve a high level of mastery of education materials.

3. Scientific research is the performance of an independent and creative exploratory activity.

4. Research practice is the students' activity in situations that require doing research. Its goal is to develop research skills and abilities for solving socially important issues (Rasskazova, 2014).

Thus, during their research children do not invent something new but through discovering something new develop a proactive attitude towards life. Research teaches young people how to work with different sources of information and perform an analysis. Students participate in the process of learning as actors and contributors, structure the research problem, devise a plan to solve it, collect and process the necessary information, analyze their actions, draw conclusions, acquire new knowledge, and develop new skills and abilities. Research is characterized by development of students' need for learning, autonomy, and allows for high-level self-improvement. An important characteristics of research is creative activity and initiative (Indriastuti, 2019; Laamena et al., 2018).

## **2. METHODOLOGY**

The objects of this study were elementary school teachers (110) from different regions of Kazakhstan and elementary students (54) of the comprehensive gymnasium No.2 of Kyzylorda Region. To achieve the goal of our research, the following methods were used: analysis of the philosophical, social, psycho-pedagogical and methodological

literature from the position of the research problem; synthesis; review of pedagogical publications, regulatory documents, and state-of-the-art pedagogical experience; survey; questionnaire; comparative analysis; experiment; practical tasks and evaluation of their results; generalization and mathematical processing of the results.

### **3. RESULTS AND DISCUSSION**

The result of our study is the following: from 110 teachers who were present at the seminar, 82% may understand new terms related to pedagogical technologies but rarely use them. Only 28% understand the meaning of the terms competence and competency. Many teachers are familiar with information technologies but only 37% of them fully understand their importance. To change the situation, we delivered a lecture titled Information and communication technology (ICT) competencies of elementary school teachers for elementary school teachers. At the lecture, exhaustive information on the topic was delivered, key notions explained, practical tasks organized in the form of a dispute, mini-games, individual and group tasks using different information technologies. Of particular importance was the fact that the teachers were provided with an enormous amount of new information on tests that could be passed via a computer at any time, on types of tests designed to compare and establish sequences and the ways to use them. At the end of the lecture, each teacher understood

the above mentioned terms, and displayed a strong intention to use ICTs in and outside of classroom.

#### **4. CONCLUSIONS**

In line with the goal and objectives of our study, the meaning of such terms as research, research activity, motive and motivation have been identified. The analysis of the existing literature allows us to come to the following conclusions. For elementary students, research activity is not only one of the learning methods, but a way to form their unique learning style and develop scientific knowledge. Research replaces education with self-education and launches a self-development mechanism. Research helps to discover students' individual abilities.

Therefore, those who work in education, as well as students' parents, should facilitate the development of young researchers' personalities from their first grades. The state of affairs in schools regarding engaging elementary students in research has been identified, in particular: an approximate number of students engaged in research, the level of their interest toward research, the level of elementary teachers' computer literacy. To remove the shortcomings, a plan of work in and outside of the classroom was devised, and an experiment was conducted.

1.As a result of the survey of elementary school teachers, a lecture was given titled Information and communication technology

(ICT) competencies of elementary school teachers to improve their computer literacy.

2.To optimize the ways elementary teachers use information technologies in teaching and educating, a specially designed visual aid was used –Kazakh language demonstration tables (for the 2nd grade).

3.Having compared the research achievements of students from parallel classes, we organized research work for elementary students in the form of a group task.

4.Intellectual quizzes were arranged to form motivation for research activity in elementary school students.

Besides, apart from the activities mentioned above, we believe there are other types of work which influence the development of motivation for research in elementary students. Those include:

- Research workshops for children. On the one hand, since a workshop is a free-style group work, through collective discussion and investigation of a problem, children learn to work in a group; on the other, through performing practical tasks on the topic of the workshop, they develop a skill of a researcher.

- Tips for teachers and students on a given topic. Tips can be provided as a counsel on a teacher and students' collective work, since the teacher is the most important element in education, specifically, his or her talent, knowledge, and skills. Therefore, every piece of advice regarding personalities, abilities, interests, and hobbies of their students can be useful for them.

- Introduction of a Science Day. Science Day can be organized in the form of a conference where the most interesting research done by students can be presented. It is a great opportunity for students not only to demonstrate their interests and intellectual abilities on Science Day, but also to receive such an invaluable experience as presentation of their work without fear of public speaking. Moreover, such an event will familiarize students with the standards according to which such events are organized and, most importantly, provide them with recommendations regarding their further research. On a school Science Day, it is possible to arrange intellectual games in the form of a quiz, for example. Thus, holding such an event does not require almost anything – just questions and several teams. Such a game will help develop children's erudition.

Summing up, the experiment designed to develop motivation for research using information technologies in elementary students has yielded a positive result. Thus, engaging children in research using information technologies stimulates the development of creative abilities and initiative at each level of learning: from proving a theoretical framework for research goals and objectives to practical application of knowledge. And, if children display interest towards information search, they will quickly adapt to studying in secondary school. Motivation is the key problem in education. A teacher can do some small deeds at a school level, but if motivation received greater attention, the process of education would be much more effective.

## **REFERENCES**

AKIZHANOVA, M. 2005. **Psychological bases of educational motives**. Vestnik KASY. N° 1. Netherlands.

Borhanian, S., & Mirabi, V. R. 2017. **Factors affecting customer satisfaction in the private sector hotels in Qom Case study: parsia Grand Hotel (4 starsT)** . UCT Journal of Management and Accounting Studies, 5(1), 24-32.

DAULETBEKOVA, G. 1996. **Methods of teaching the Kazakh language by forming educational motives of students**. Almaty. Kazakhstan.

DUBENYUK, N. 2007. **Large Encyclopedia on Psychology**. Moscow. Russia.

INDRIASTUTI, H. 2019. **Entrepreneurial inattentiveness, relational capabilities and value co-creation to enhance marketing performance**. Giap journals. Vol 7. N° 3. India.

ISAYEVA, Z. 1989. **Development of a professional competence in university students to organize research work of school children**. Almaty. Kazakhstan.

KONSTANTINOV, N., MEDYNSKIY, E., & SHABAYEVA, M. 1982. **History of pedagogy**. Education. Moscow. Russia.

Laamena, C. M., Nusantara, T., Irawan, E. B., & Muksar, M. 2018. **How do the Undergraduate Students Use an Example in Mathematical Proof Construction: A Study based on Argumentation and Proving Activity**. International Electronic Journal of Mathematics Education, 13(3), 185-198. <https://doi.org/10.12973/iejme/3836>

LEONTOVICH, A. 1999. **Educational research of school students as a model of a pedagogical technology**. Folk education. N° 10. USA.



MATEROVA, A. 2000. **Motivation aspect in improvement of research activities of engineering students.** Vector of science. TGU. N° 2. Ukraine.

OBUKHOV, A.S. 2008. **Issues of assessing the quality of education.** Schoolchildren's research. N° 2: 17–23. UK.

OZHEGOV, S., & SHVEDOVA, N. 2006. **Dictionary of the Russian language.** TEMP. Moscow. Russia.

PEREZHOVSKAYA, A. 2015. **John Amos Comenius's contribution to pedagogical science.** Innovative pedagogical technologies. Proceedings of the II international scientific conference. pp. 27–30. Kazan. Russia.

PIROGOV, N. 1993. **Selected works in pedagogy.** Moscow. Russia.

RASSKAZOVA, Z. 2014. **Research activity of elementary school children as an education component in comprehensive school environment.** Young scientist. N° 4, pp. 1080-1082. Russia.

Saedi, Z., & Safara, M. 2017. **Types of Affection and Its Effects on Mental Health in the Family.** UCT Journal of Social Sciences and Humanities Research, 5(2), 4-12.

SAVENKOV, I. 2007. **Psychological bases of research education of school students.** Physics: problems of teaching. N° 3: 14–24. Russia.

SEMENOVA, N. 2006. **Research activity of students.** Primary School. N° 2: 45-49. Russia.

SLOBODCHIKOV, V. 2006. **Notion of research activity in education psychology.** Schoolchildren's research. N° 1: 34-38. USA.

SOO, M., SHELBY, R., & JOHNSON, K. 2019. **Optimizing the patient experience during breast biopsy.** Journal of Breast Imaging. wbz001, <https://doi.org/10.1093/jbi/wbz001>. UK.

TALYZINA, N. 2007. **Essence of activity approach in psychology.** Methodology and history of psychology. Vol. 2. N° 4. Russia.

**TAUBAYEVA, S. 2001. Scientific bases of the development of research culture in comprehensive school teachers.** Almaty. Kazakhstan.

**TUIMEBAEV, J. 2009. Education and science. Encyclopedic dictionary.** Almaty. Kazakhstan.

**Y AidyllaQyzy, E. 2014. Forming informational and professional competence of primary school teachers.** Doctoral thesis. Almaty. Kazakhstan.

**YANG, Y., PAN, T., & ZHANG, J. 2019. Global optimization of Norris derivative filtering with application for near-infrared analysis of serum urea nitrogen.** Scientific Research Publishing. Vol 10. N° 5. China.





**UNIVERSIDAD  
DEL ZULIA**

---

## **opción**

Revista de Ciencias Humanas y Sociales

Año 35, N° 20, (2019)

Esta revista fue editada en formato digital por el personal de la Oficina de Publicaciones Científicas de la Facultad Experimental de Ciencias, Universidad del Zulia.

Maracaibo - Venezuela

**[www.luz.edu.ve](http://www.luz.edu.ve)**

**[www.serbi.luz.edu.ve](http://www.serbi.luz.edu.ve)**

**[produccioncientifica.luz.edu.ve](http://produccioncientifica.luz.edu.ve)**