

**DIDACTIC FOUNDATIONS OF IMPROVING THE CREATIVE ACTIVITY  
OF FUTURE MATHEMATICS TEACHERS BY MEANS OF INFORMATION  
AND COMMUNICATION TECHNOLOGIES**

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**Abstract**

In this article, opinions are expressed about ways how to improve the creative activity of future mathematics teachers by means of information and communication technologies.

**Keywords:** program, education, profession, process, competence, database.

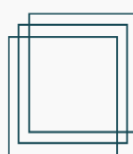
**Аннотация**

В данной статье высказываются мнения о способах совершенствования творческой деятельности будущих учителей математики средствами информационно-коммуникационных технологий.

**Ключевые слова:** программа, образование, профессия, процесс, компетентность, база данных.

Within the content of the State program " Action strategy (Harakatlar strategiyasi ) for 2017-2021" in our republic, a number of decisions on raising the education system to the level of world standards, including support for innovations in this field, rapid introduction of information technologies and information-educational resources tools, were adopted and implemented. notable measures are being taken to increase. The head of our state Sh. Mirziyoev noted: - in this regard, it is necessary to take into account the fact that the internet system of modern computer technologies and information and educational resources is far ahead of us. *[Mirziev Sh.M. Critical analysis, strict discipline and personal responsibility should be the daily rules of every leader's activity. Report at the extended meeting of the Cabinet of Ministers, January 14, 2017, dedicated to the main results of socio-economic development of our country in 2016 and the most important priorities of the economic program for 2017. - Tashkent: "Uzbekistan", 2017. - 104 p.]*

In the "Kadrlar tayyorlash Milliy dasturi " of the Republic of Uzbekistan, special attention is paid to the strengthening of the information bases of educational institutions, and the main priorities of the education system are the formation of personnel who can think correctly in social and political life, have pedagogical



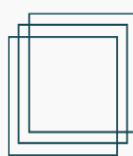
professional skills, and are able to perform promising tasks based on the achievements of the world level<sup>1</sup>. It is noted that in the framework of the ongoing reforms in the educational system of the Republic of Uzbekistan, the use of information educational resources is aimed at increasing the intellectual potential of young personnel and ensuring compliance with social requirements in the field of education.

Decree of the President of the Republic of Uzbekistan, No. PF-5847 dated 08.10.2019 Education in accordance with the interests of students and the needs of personnel customers by developing curricula based on individual educational trajectories on the introduction of digital technologies and modern methods into the educational process, aimed at the formation of creative thinking and practical skills in students formation of programs, gradual granting of academic independence to higher education institutions upon their approval, acceleration of the creation of national electronic educational resources, organization of translation of foreign electronic educational resources, gradual increase of the weight of electronic resources in the educational process, creation of electronic educational literature, their activities such as creating a system for placing information about electronic resources using a QR code in libraries for the purpose of downloading to mobile devices are planned (<https://forms.gle/pmDu99nuPXZLbxSD9>).

Education based on the tools of information-educational resources in the higher education system, focusing on issues of creativity based on improving the quality and efficiency of students' knowledge, improving their positive approach to professional activity, is considered the current task, and the scientific research conducted within the framework of these tasks is important in the light of our research work. In this process, with the increase in the volume and complexity of the information that determines the content of education, it is important to pay attention to the improvement of creative activity in the means of information-educational resources in the creation of intellectual opportunities and the limitation of training time. Such opportunities require the establishment of a high-quality and high-tech environment as the basis of a modern education system. Its creation and development has its own technical complexity and implies the introduction of specific information and communication technologies into education. The application of information-resource tools to the educational system is intended to provide students with educational resources, to expand their database, to develop their scientific outlook by working with electronic resources based on the development of creative activity. In this process, computer networks, special computer simulators, communication technology tools are provided.

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<sup>1</sup> O‘zbekiston Respublikasi “Kadrlar tayyorlash milliy dasturi”//Barkamol avlod– O‘zbekiston taraqqiyotining poydevori. –T.: “Sharq”, 1998. 5 b



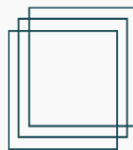
Currently, higher education institutions have electronic information resources for various forms of teaching, i.e., lectures, laboratories, and practical training, and their use requires special attention. It was determined that it is important to increase the variety of information-educational resources in the development of the creative activity of future mathematics teachers, to improve the methodical system of their effective use in all forms of teaching, and to develop methodical recommendations for their implementation. For this, it is appropriate to comment on the content and essence of creative activity.

Creativity is a Latin term meaning "creation" or "making out of nothing" (wikipedia dictionary). In the West, creativity is interpreted as a technological element of creativity. Before the information age, few people knew about creative technologies. The concept of creativity was highly valued in society and was widely understood even in the Middle Ages.

S. Spearman emphasized in his scientific research that creativity is a high level of human intelligence, and it creates new content by changing and creating relationships (...). E. Torrance recognized that creativity is not a special, but a constellation of general intelligence, a general ability based on personal characteristics and abilities characteristic of productive thinking (...). According to V.N. Petrova, A.N. Petrov, creativity is a desire for innovation, finding a solution in an unusual situation, as well as the ability to deeply understand personal experience (*Петрова В.Н. Формирование и развитие опыта креативной и самообразовательной деятельности в вузе // Вестник Университета РАО. — Москва, 2009. № 2. — С. 112–117*).

It should be noted that the creative activity of future mathematics teachers is formed through the search for effective methods of information education technology and the realization of the need to improve their creative activity. The goal of the educational process requires problem-solving, unusual approaches to teaching and educational work. Creativity, in the organizational aspect of the teacher's pedagogical potential, the peculiarities of the professional activity of the pedagogic staff are the following motivational, problematic emotional, informational, self-confidence, communicative, altruistic, analytical, constructive; made it possible to highlight its innovative components.

In the formation of a student as a mature specialist, it is important that he not only perfectly acquires relevant professional knowledge, but also that he is able to creatively use the acquired knowledge, that he is capable of creative activities in addition to the standard tasks that are set before the employee in his chosen field. Computer literacy is also an important tool for developing their professional competence and increasing their intellectual potential. On the basis of information-resource tools, a wide opportunity will be created to perform multimedia exercises, non-standard tests and educational tasks for independent learning. Electronic



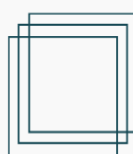
resources that organize independent work are the basis for the interactive enrichment of the content of the subjects along with the development of educational motives for professional subjects [Коваленко Т.М. *Инновационная школа: аксиомы и гипотеза.*-Москва МОДЭК, 2003.-256]. Increasing the creative activity of students is considered an urgent problem in all areas of education. This requires that pedagogues have the skills to use information resources.

It was determined that creativity is related to creating new ideas and creativity. In our opinion, the creative activity of future mathematics teachers based on the development of their creative and ideological immunity on the basis of information-educational resource tools is understood as the competence that ensures their activity in the development of creative approaches to their professional activities in the future. Competence is the ability of students to creatively use the theoretical and scientific knowledge acquired from subjects during the course of study to solve educational problems arising from the content of the subject. Competence education prepares students to understand and solve the main problems that will arise in science, industry, society, independent life and professional activity in the future, and to make correct and reasonable decisions. A person develops depending on the occupation he takes, his position in independent life, and the level of literacy. His ecological competence rises from the level of private competence to the level of general, basic competence.

The information used in the process of global information is unsystematically absorbed by young people who are curious by their psychological nature and strive to understand the essence of any situation, reality, event, or process.

Improving the creative activity of future mathematics teachers by means of information-educational resources as a pedagogical problem requires a competent approach. This is the implementation of tasks such as the development of electronic teaching and methodical materials for science based on an innovative approach to improving the creative activity of students, the virtual demonstration of laboratory and practical work, the publication of independent education topics online, and the improvement of the methodological system for creating an interesting and science-related database. This will serve to create a new method of training future mathematics teachers for professional activities, to train them as creative and highly qualified personnel. At this point, it is necessary to analyze the specific conditions and significance of teaching by means of information-educational resources in improving the creative activity of students.

In the current era, the enrichment of knowledge at a very high speed is characterized by the need to constantly work independently on oneself. In such conditions, the demand for creative activity in the growth of the quality of education is considered one of the urgent problems. An effective solution to this problem is information resources.



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