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PROBLEM SOLUTION METHODOLOGY BASED ON THE INTEGRATION OF MATHEMATICS AND TECHNOLOGY

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Abstract: In this scientific work, the theoretical and practical foundations of the methodology of solving problem situations integrated with modern information technologies in mathematics education are highlighted. Methodical approaches aimed at developing students' logical thinking, analytical thinking, algorithmic approach and digital literacy were developed in the study. Effectiveness of using interactive platforms such as simulation, dynamic programs, virtual laboratories in solving mathematical problems is justified. Also, the didactic possibilities of modeling problematic situations with the help of technology, creating conditions similar to real-life issues, and individualizing student activity are analyzed.

Keywords: mathematics education, information technology, integration, problem situation, problem-based education, digital pedagogy, interactive platforms, algorithmic thinking, modeling

The current era places great demands on teachers and students, the most important of these demands is the effectiveness of the lesson, its quality, the knowledge and skills of students, various educational activities in schools, their organization and the acquisition of various knowledge and skills by students. Today, the role of innovative technologies, technical tools, including modern computers, in the correct and effective organization of the educational process is incomparable. The use of multimedia, animation, graphics, slide films and video films related to the subject of the lesson helps to make the lesson process more interesting, and for this, the teacher should work on himself and ask himself the question "how can I enter today's lesson process with something new and organize the lesson interesting", that is, avoid traditional education and strive to provide non-traditional education. It is known that education is a type of activity in cooperation between the teacher and the students. Through the lesson, the teacher conveys his knowledge, skills and abilities to the students through training, and the students acquire the competencies to use them as a result of their mastery. In the process of learning new knowledge, students naturally use different forms of learning, such as receiving information, processing it, and putting it into practice. Nowadays, it is no secret to anyone that advanced pedagogic scientists have recognized that one of the most important indicators is the improvement of the possibilities of using modern computer technologies in general education schools, the full use of the possibilities of modern technologies in the educational process. The work of equipping secondary schools in our country with modern computer and telecommunication technologies is being carried out rapidly. This, in turn, requires primary school teachers to approach their work in a new way. The introduction of new technologies into the educational process of elementary school classes, not by squeezing the teacher by technical means, but by changing his task and role through a new approach, turns the teaching activity into a profession based on a more lively, creative and creative approach. When organizing the teaching process with the help of modern information technologies, the teacher initially:[1]

- the purpose of the lesson;
- ways to achieve the goal;
- methods of presenting educational materials;
- teaching methods; - types of educational assignments;
- questions for discussion;
- ways of organizing discussions and debates;
- it is necessary to identify factors such as methods of interaction and communication. [2]

In the process of education, in the process of raising students to be intellectually and spiritually mature people, in developing their knowledge, skills and abilities in the essence of our national traditions and values, in learning the rich spiritual heritage of our great ancestors, information and communication technologies are used use plays an important role. Through the means of information and communication technologies, teaching staff and students will have the opportunity to receive, search, process and assimilate a large amount of information. Of course, the introduction of new pedagogic and information technologies in educational institutions, conducting training sessions using new interactive methods, modern tools, i.e. information technology tools, including the use of multimedia in classes, and the use of the Internet will undoubtedly have their effect. By using modern computer technologies, the teacher can perform the following tasks: - through the use of multimedia technologies in primary classes, students' interest in science develops; - this method of education activates students' thinking abilities and increases the efficiency of learning material; - provides an opportunity to model and visualize processes that are difficult or complex to demonstrate; - assimilation of educational materials is effective not only according to the level, but also according to the level of logic and acceptance of students; - students are given the opportunity to search for and find materials and find answers to problematic issues through independent research; - conditions are created for students to master a new topic, solve examples, write essays, statements, get acquainted with educational materials, select and analyze information and data quickly. [3]

Today, the interest in using interactive methods and information technologies in the educational process is increasing day by day. One of the reasons for this is that until now, in traditional education, students were taught only to acquire ready-made knowledge, while the use of modern technologies teaches them to search for the acquired knowledge by themselves, to study independently and to think, analyze, and even draw final conclusions by themselves. In this process, the teacher creates conditions for the development, formation, learning and upbringing of the individual, and at the same time performs the functions of management and guidance. Applying modern information technologies to primary education not only increases the effectiveness of training sessions, but also plays an important role in educating an independent and logically thinking, well-rounded and highly moral person by applying the achievements of science in practice. Every teacher should be creative, he should enter each lesson thoroughly prepared and innovative, because the sameness repeated in each lesson will weaken the student's interest in the lesson and science, as a result, it will lead to a decrease in the effectiveness of the lesson. Important aspects of information technology for the teacher and student are as follows: [4]

- focus the student's attention;
- expanding the perception of information;
- inquisitiveness, creativity and independent activity;
- self-assessment.

Modern information technology tools include: computer, scanner, video camera, video camera, LCD projector, interactive whiteboard, fax modem, telephone, e-mail, multimedia tools, Internet

and Intranet networks, mobile communication systems, database management systems, artificial intelligence systems. Information technology tools are used in the conscious and planned implementation of certain actions. This process includes: - a computer, as well as a printer, modem, microphone and sound broadcasting device, scanner, digital video camera, multimedia projector, drawing tablet, musical keyboard, etc. and their software; - hardware software; - virtual text constructors, multiplications, music, physical models, geographic maps, screen processors, etc.; - a collection of information - reference books, encyclopedias, virtual museums, etc.; - technical skills trainers (entering information from a set of keys without looking at the keys, initial mastering of software tools, etc.).

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