

## THE USAGE OF NEW TECHNOLOGIES BASED ON A COMPETITIVE APPROACH

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**Abstract.** *The article presents the idea of pedagogical technology – a module, the purpose of which is to achieve a guaranteed result so that educational subjects can work together to ensure that the interactive methods they choose lead to a positive result in the learning process. New modern methods-joint thinking of students, the method of teacher's influence on the student-will become a key part of the lesson. High efficiency of interactive methods based on their manifestation in the combined behavior of learning subjects (teacher and student) covered in the article.*

**Keywords:** *informative, non-traditional, interactive, modular, subject, natural sciences, technology, engineering, art, competence.*

**Description of the article.** New pedagogical technologies are important for improvement of mathematics subject based on competence approach. In this case, the following methods: methods of the first category “Traditional methods” and using them to impart knowledge to students is based on the principle of “Delivery”. They include: informative-receptive or illustrative-explanatory; reproductive; problematic statement; heuristic or semi-research and research, “telling”, “showing”, “demonstration”, “lecture presentation”, “question-answer”, “discussion”, etc. The methods of the second category are called non-traditional or "Interactive methods" and rely on the principle of “Activation” in students’ knowledge acquisition. These include Accelerated Teaching Method, Problematic Exercise, Small Group Work, Round Table Discussion, Cluster Method, Confrontational Approach, and many other methods.

The methods of the third category are called “Advanced or modern methods” and are based on the principle of the competence approach to increase the effectiveness of the educational process. They include: “Directed text”, “Programming”, “Technological map method”, “Modular teaching method”, “Intelligent map” and “Design method”. Forms of organization of teaching mathematics and its departments taught in general secondary schools are determined by the influence of teachers and students on each other during the educational process. Focuses on the educational process of teaching forms (lectures, practical training, seminar, laboratory, etc.) and individual (independent work, individual counseling, etc.) educational activities. The characteristics of the mathematics lesson are as follows: 1) educational and educational tasks are solved; 2) specific educational material is discussed; 3) appropriate teaching methods are selected to achieve the goals; 4) the activity of the students' team is organized in a certain way.

The interactive methods chosen by them will bring a positive result to the educational subjects in order to achieve a guaranteed result based on the idea of pedagogical technology - the set module. New modern methods - joint thinking of students, the teacher's method of influencing the student will be the main part of conducting the training. Nowadays, new forms of teaching organization have appeared in the rapidly developing modern education system. One of the new forms of teaching organization is the person-oriented approach.

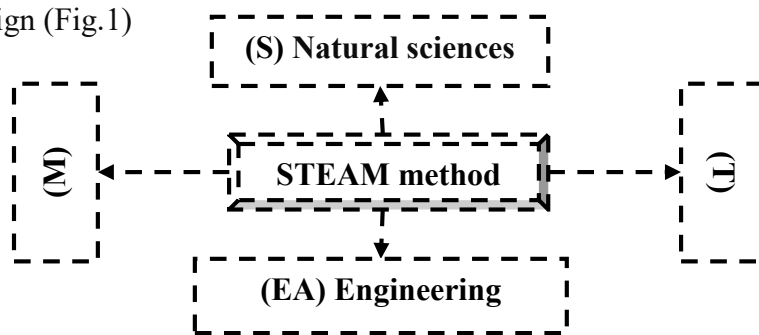
The person-oriented approach in the educational system recognizes that not only teaching is important, but also the need to take into account the development of the individual, the knowledge, skills and abilities of the student, individual abilities and personal qualities based on the Competency approach. The main goal of imparting knowledge in personalized education is to identify the individual abilities of each student and encourage them to develop their knowledge and become masters of their profession in the future. The goals of personalized teaching: taking into account the personal interest of each student, offering students ways to complete independent tasks, the teacher works with each student individually, corrects their mistakes, and develops self-assessment competence.

Unconventional education performs didactic functions such as expanding the scope of knowledge, educating and activating the characteristics of present-responsibility in them, and educating their ability to think independently. As it was noted in the experiments, if the training was carried out using the usual method based only on listening, the students learned a maximum of 20% of the information, and when using advanced pedagogical methods, it was confirmed that this indicator increased to 80-90%. Non-traditional education is a complex process of cooperation between a teacher and a student to achieve an educational goal.

**Brainstorming** is a collective idea of solving practical or scientific problems. During brainstorming, students try to solve a simple and complex problem: the teacher, without criticizing them, creates more personal ideas for solving it, then separates the more effective ideas, discusses and develops them, evaluates the possibilities of proving or refuting them. This method performs all tasks, but its main task is to activate students' learning activities, to make them interested in independent understanding and solving of problems, and to develop a culture of communication and exchange of ideas in them. Encourages one's abilities and skills, self-development, freedom from thinking and overcoming difficulties in solving a creative task thanks to the help of friends.

Currently, the use of STEAM educational technology in the integration of subjects in the teaching of mathematics is one of the innovative methods. How to prepare and conduct STEAM integrated training? The use of STEAM educational technology has received very little attention in the pedagogical literature, where the main emphasis is placed on the experience gained by science teachers in conducting integrated training. The main thing here is the creativity of science teachers, in finding non-standard teaching technologies.

What is the STEAM educational system? If we write this abbreviation, we get: STEAM is **S** for science, **T** for technology, **E** for engineering, **A** for art and **M** for math. (E — engineering, A — art combined as engineering art (EA)) In English it is: Abbreviation of natural sciences, technology, engineering, arts and mathematics. These directions are the most popular technology in the modern world. It has been used as a template or theme unifying scientific research and engineering design (Fig.1)



**Figure 1. Structural structure of STEAM method of science integration**

As a result of our many years of creative research, the implementation of interdisciplinary integration in the essence of STEAM educational technology is considered important and is an acceptable way to interest students in science. Direction of STEAM education. That is, during learning, we need to work not only with our brain, but also with our hands. The main difference between the STEAM approach and other technologies is that students use their minds and hands to successfully learn various topics. They "read" the knowledge they have received. For example, it is important to explain the diagonals of a rectangle with the process of building the foundation of a house, or the different states of water in the mixture problems, and the motion problems in the gas state by connecting them to the direction. The solution to this is based on connecting issues with life processes, enriching the students' imagination and effective use of visualization in the lesson.

Another form of logical thinking is a mathematical conclusion, which consists of a third consequential conclusion formed from two fixed properties. For example: the diagonal of a rectangle divides it into two triangles, the sum of the interior angles of each triangle is 1800. In this case, the sum of the interior angles of the rectangle is 3600 (summary). In order for the exercises to be interesting, each problem in these exercises should not be read word for word, but should be of a nature that activates their higher activities, based on the heuristic method. 1. When the goal is to determine the basic knowledge of students, this method is implemented in the introductory part of the lesson.

**Conclusion.** We conclude that, based on such a competence approach, mathematical literacy self-examines the set of scientific knowledge, increases the scientific potential, and increases the ability to learn independently. Also: - strengthens theoretical knowledge; - the ability of independent creative thinking is formed and developed;

- learns mathematical connections; - achieves conscious assimilation of the laws of mathematics; - develops the ability to make graphs depending on the condition of the problem;
- learns to record given mathematical quantities based on graphs;
- begins to understand that theory and practice should be understood simultaneously.

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