# Effective Methods Of Teaching Mathematics

# Masimova Gulmira Makhsutovna,

mathematics teacher Academic lyceum at Tashkent Chemical-Technological Institute

Annotation. Each epoch sets itself specific tasks of education, expressing the social order that the school must fulfill. A new era requires new approaches. Not so long ago, the ultimate goal of school education was considered to be the acquisition of a certain level of knowledge, skills and abilities prescribed by curricula and educational standards. Today, the situation has changed radically. However, the field of education is developing rapidly and requires constant innovations. Today, there is no doubt that the modern schoolboy is very different from his peer ten years ago.

**Keywords.** technical innovations, teaching methods, stable involvement in the learning process, creative tasks, interactive methods, subject technologies, creative solutions.

**Introduction.** Today, there is no doubt that the modern schoolboy is very different from his peer ten years ago. And this is natural: the rhythm of life has changed, the subject and social world has changed, and even the expectations of adults and children have changed. Modern children grow and develop in the conditions of a post-industrial information society, when all technical innovations become the life of the younger generation. At the same time, modern schoolchildren in the development of thinking and mental abilities are not ahead of their age at all. Moreover, they are often unable to concentrate on any activity, scattered; they have a sharply reduced imagination, creative activity. Children are aimed at getting a quick and ready result "at the touch of a button"[1]. In this regard, the mastery of operational intellectual general educational skills comes to the fore, the emphasis is on self-education and self-control in the process of socialization.

So, the main task of the modern lesson is the integral formation of the student's personality; a modern lesson should not only equip students with deep and thorough knowledge, but also teach them to learn, promote the formation of strong teaching motives and contribute to the education of the student's mental abilities [2].

Methods. Accordingly, the pedagogical technologies themselves should be reviewed and changed, that is, the totality of forms, methods, methods, methods of teaching and educational tools that are systematically used in the educational process. All of us, teachers working in the school, are interested in improving the effectiveness of teaching. What exactly is meant by the result? I see it not in the mechanical assimilation of the amount of knowledge and skills that are provided by the program, but primarily in the ability to apply them in practice, the demand for life. Therefore, the modern lesson should be based on interactive teaching methods, that is, joint learning, learning in interaction. Thus, along with traditional training, the pedagogy of cooperation, developmental, game, problem-based, heuristic training, private subject technologies, the project method, teaching through learning, and some others are becoming increasingly used [3]. The effectiveness of the educational process and the speed of learning by students is based on the validity and correct applicability of various technologies and teaching methods. An indicator of the effectiveness of the applied training methods is a high result. At the same time, teaching methods can be considered effective if the student demonstrates not just deep knowledge of a particular subject, but is able to conduct interdisciplinary connections, is able to structure knowledge, justify and prove it, and apply it in real life situations. Active or practical teaching methods have a great influence on the activation of thinking and the awakening of students ' activity during the lesson. They provide a stable involvement in the learning process, stimulate learning activities, and ensure a strong assimilation of the material. In addition, independent decision-making by students has a positive effect on motivation and the development of positive emotions.

In my opinion, the following approaches are the most optimal for implementing interactive teaching methods: creative tasks, working in small groups, role-playing games, social projects, etc. The teacher in this case acts only as the organizer of the learning process, the leader of the group, the assistant, the creator of conditions for the initiative of students. In the lesson, students interact directly with their own experience and the experience of their friends. New knowledge, skills, and relationships are formed on the basis of and in connection with such experiences. Students should think, understand the essence of things, comprehend ideas and concepts, and already on their basis be able to search for the necessary information, interpret it and apply it in specific conditions. Interactive methods help to solve this problem. At the same time, it should be borne in mind that only 1-2 interactive methods can be used in one lesson, and not their kaleidoscope.

The implementation of active teaching methods involves a close relationship between the teacher and the students, which is based on a contractual basis and which takes into account the principles of individualization and differentiation, as well as the optimal use of human and technical potential. Communication and dialogue are mandatory components here. The main role of the teacher is general guidance, management of the process, but only as a condition for ensuring self-management [4].

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# **Results.** Let's look at the possibilities of using the most common interactive methods in math lessons. The basis of the activity of a mathematics teacher is not just the accumulation of mathematical knowledge by students and the development of the ability to solve problems of an increased level of complexity, but the cooperation of the teacher with the students on the study of each mathematical problem. It is important to develop independent mental activity of students by all means. The quality of training can only be achieved as a result of ensuring efficiency at each stage of training. That is, the entire learning process should be built according to the scheme: perceive - comprehend - remember - apply-check.

One of the main methods that allows students to be creative in the process of learning mathematics is the method of heuristic conversation. This method was developed in the works of such famous teachers as Lezan, S. I. Shokhor-Trotsky, V. M. Bradis, W. Sawyer [5] and others. The idea of the method consists in the fact that the teacher, by consistently setting tasks, "leads" students to independently detect a particular mathematical fact. So, step by step, students independently overcome difficulties in solving the problem and come to its solution. The role of the teacher is to organize and direct the student's work.

Practice shows that students quickly get "into the taste" and their interest in those types of work in which the method of heuristic conversation or its varieties is used is clearly increasing.

Brainstorming as a method of learning was proposed in the late 1930s by A. Osborne. It involves stimulating creative solutions [6]. During the "assault", its participants put forward as many solutions to the task as possible, without even analyzing them at the first stage. Then, based on the discussion of all the proposed ideas, the most productive one is selected. The method is effective because even students with a minimum level of knowledge can take part in the process. It has a minimal stressful effect, and develops students ' ability to think quickly.

**Discussions.** The method of thematic discussions is close to this method. But in this case, the discussion process is limited to a specific framework. As a result of using the method, the information base of students about the discipline under discussion is expanded.

In general, creative tasks form the basis of any interactive method. An atmosphere of openness and search is created around them[7]. A creative task gives meaning to learning, motivates the student. It is important to remember that for the formation of mathematical thinking, a simple set of problem tasks is not enough, a system is needed. Its main elements can be considered as:

- designing problem tasks (thinking through the most important problems that are solved throughout the entire training module and developing problem tasks for each lesson, in the system, obeying the solution of the main problem);

- differentiation of problem tasks;

- drawing up an algorithm for solving a problem task. Working with problem tasks will not bring results if you do not teach children to solve them. For this purpose, you can use the following algorithm: the designation of the problem-the definition of the structure of the object under study-the search for a solution-the result-checking the correctness of the solution.

Another effective method for working out conceptual material is "Everyone teaches everyone". This method can be used when studying new material and when generalizing basic concepts and ideas. Students teach each other in pairs of rotating staff. Order of the event:

1. The teacher prepares flashcards: definition of concepts, description of concepts. Each student receives a card.

2. Carefully read the text, understand the proposed information.

3. Each student should explain to the other the information contained in his card, make sure that the interlocutor understood and remembered the material.

4. Each student is free to move around the classroom, there is an exchange of knowledge. The task of the student is to teach as many people as possible and to learn as much information as possible.

Working in groups helps to significantly diversify the work in the classroom[8]. In my opinion, this is one of the most optimal options for conducting lessons using interactive methods in high school. At the same time, students should clearly follow the basic rules of working in a small group:

1. Start by defining the agenda: check whether everyone understood the task equally, if necessary, check with the teacher the task. 2. Assign roles:

- moderator (gives the floor, monitors the implementation of the rules);
- secretary (writes down all proposals, ideas, decisions);
- timekeeper (monitors the time of the task).
- 3. When working in a group, follow the rules:
- each participant has the opportunity to speak out;
- all members of the group respect the values and views of other members, even if they feel they disagree with them;
- ideas and suggestions are discussed, not the people who expressed them;
- all participants make comments briefly and to the point;
- all participants strive to create an open, constructive, friendly atmosphere.
- 4. After completing the work in the group, analyze:
- how do you assess the work of your group?
- what was the most successful and why?
- what difficulties have you encountered?

- how could they be overcome?

- how were the work rules observed?

- how would you change your behavior the next time you work in a group?

**Conclusion.**Productivity of the pedagogical process during the development of new knowledge by students and their acquisition of new skills, the process is extremely complex. However, the choice of optimal use of traditional and innovative teaching methods allows students to form a systematic thinking that will guarantee their further learning and personal growth.

The specifics of childhood are such that everything that a child takes on, he has to learn again. Does this mean that the teacher should play along with the child, adapt to his interests and mood? Not at all. Only real achievements should be noted, and it is necessary to promote this success. A loser at school and at home is a potential loser at work, in the family, in life. Without a sense of success, the child loses interest in school, in learning, so it is justified to create a situation of success for the student. Technologically, this is achieved by a number of operations: encouraging words and soft intonations, correct communication, calm and friendly speech. The situation of success is especially important in working with children whose behavior is complicated by a number of reasons.

A situation of failure is a subjective emotional experience, dissatisfaction with oneself during and as a result of performing an activity. It cannot be considered in isolation from the situation of success, but only as a stage in the transition from one success to another.5 The pedagogical purpose of the situation of failure, as well as the situation of success, is to create conditions for the individual development of the child.

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