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## **INNOVATION IN TEACHING MATHEMATICS - THE ROLE OF PEDAGOGICAL TECHNOLOGIES**

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### **ABSTRACT**

In the article, in recent years, computer and information technologies have rapidly entered today, the use of computers in order to improve students' ability to think logically in mathematics, computer literacy, innovative-pedagogical approaches to teaching mathematics, primary school education. students are thought about teaching mathematics.

### **KEYWORDS**

Technology, mathematics, innovative-pedagogical, education, electronic development, computer literacy, methodology, didactic materials.

### **INTRODUCTION**

Since the first years of independence in Uzbekistan, the most important part of the process of reforming and renewing the society, the policy of reforming the education sector has been consistently implemented as a necessary and mandatory condition for democratic changes in the society, sustainable

development of the economy, and the integration of the republic into the world community.

Today, the Law "On Education" considers the continuous education of the young generation and the process of its upbringing as a single educational

system. Each part of the education system has a special place.

In the Law "On Education" in the development of school education, "forming the process of education, determining the content of education, developing didactic laws and principles of the implementation of the process of education, improving state education standards, educational programs, a new generation of textbooks, educational methodology - to solve the task of creating recommendations.

Methodological problems arise in every lesson, however, they usually do not have a single value solution. In order for the teacher to be able to quickly find the most suitable solution for the given educational situation of the methodical recommendations that have arisen in the lessons, it is necessary to have a wide enough training in this field.

Since the existing didactic games are insufficient in terms of logic and mathematics as a means of teaching the methodology of primary education, didactic games are used and used only as a means of strengthening the learned material.

The subject of mathematics primary education methodology consists of the following:

- Determining and justifying the intended purpose of teaching mathematics (why mathematics is taught, taught
- Scientific development of the content of mathematics education (what to teach), how to distribute the level of knowledge presented in one system in accordance with the age characteristics of students, ensure consistency in learning the basics of science, educational activities the load given by classes is eliminated, the content of education corresponds to the students' ability to acquire specific knowledge.

- Scientific development of teaching methods (how to teach), i.e., what is the methodology of educational work for students to acquire the economic knowledge, skills, abilities and mental activity that are needed today should be?

- Use of teaching tools - textbooks, didactic materials, demonstration manuals and educational equipment (how to teach)

- Scientific development of educational organization (how to organize lessons and extracurricular forms of education).

According to the program of mathematics, the elementary school teacher intends to provide students with the following knowledge:

- Numbering whole negative numbers;
- Basic quantities and their measurement units;
- Arithmetic operations;
- Textual issues;
- Algebraic material (equality, inequality, etc.)
- Geometric material;

The lesson is a historical, complex form of organizing mathematics education at school, verified by many years of experience and meeting the basic requirements of the present time. In the centuries-old history of the development of mathematics from the earliest times to the present day, four periods of its development are noted:

- The period of the emergence of mathematics related to the summation of initial factors. In this period, mathematics does not yet have its own subject and method as a separate science, but only some facts

from mathematics are collected. An example of this is ancient Egyptian, Babylonian, Chinese and Indian mathematics.

- The period of elementary mathematics. Ancient Greek mathematicians founded this era and it was continued by Middle Eastern scientists in Central Asia, including Al-Farghani, Abu Ali Ibn Sina, Omar Khayyam, Ulug`beks.
- The period of mathematics of variable quantities.
- The era of classical higher mathematics.

The student's acquisition of mathematical knowledge depends not only on choosing the right method in the study, but also on the form of organization of the educational process. A lesson is an educational work organized by a fixed number of students under the guidance of a teacher, based on a specific schedule, according to the program.

During the lesson, students learn from mathematics to theoretical information, calculation skills, problem solving, various measurements, that is, all educational work is done in the lesson.

The unique aspects of the mathematics lesson, first of all, come from the characteristics of this educational subject. One of its features is that along with the arithmetical material, the elements of algebra and geometry are also studied. Another unique aspect of the elementary course of mathematics is the joint consideration of theoretical and practical problems. That's why in each lesson, new knowledge is given and practical educational skills are improved. The well-known scientist J. Ikromov in his book "“Язык обучения математики” that "Mathematical culture formation of schoolchildren is divided into several periods". First of all, they determine the content of objective concepts - mathematical reality. In this case,

the connection between the accuracy characteristics of the objects and the historical aspects is of particular importance.

If we pay attention to the sentence of mathematical reality, students will feel this reality only when they directly know the importance of mathematical books in the life process, that is, when they directly perform examples and problems related to everyday life. Therefore, the organization of teaching mathematics in connection with everyday life is important in the student's activity. On the basis of solving examples related to daily life, the student concludes that mathematical knowledge is not just knowledge to be mastered, but must be mastered as a vital necessity.

Usually, several didactic materials are implemented in the lesson: learning new material; consolidation of the passed material; consolidation of knowledge; generalization, systematization of knowledge; formation of solid learning and skills, etc. Another unique aspect of mathematics lessons is the abstract nature of the learning material. Therefore, it also depends on visual aids, careful selection of active teaching methods, student activity, mastery level of class students, etc.

Various district educational tasks are also solved in the mathematics lesson. It cultivates observation, intelligence, critical look at the environment, initiative, responsibility and conscientiousness in work, correct and clear speaking, accuracy in calculations, measurements and records, hard work and overcoming difficulties.

There are the following forms of organizing educational work outside the classroom:

- Independent homework.
- Individual and group training with students.

- Classes with students who are capable of mathematics.
- Extracurricular activities in mathematics.
- Work with students, excursion to nature.

The forms of work listed here and the lesson complement each other. The main issue concerns the lesson. The teacher directs all activities in the lesson. In additional classes, the work is done by the teacher himself or by students under the guidance of the teacher.

Today, the situation that needs to be justified is to provide pedagogical support to the student and to find convenient forms and possibilities of pedagogical support in the process of learning.

Several concepts are worked with students in each lesson. understanding of each concept is carried out by repeating and recalling another concept, and this concept serves to explain the next concepts. In the course of teaching, each educational material is developed, this educational material is the foundation for understanding the materials that will be taught after it. If we look at the process of mastering another concept, it is formed as a result of teaching the interdependence of several lessons. In this way, the formation of mathematical concepts is not formed in one lesson, but in the process of passing a number of interconnected lessons. We call such lessons a system of lessons together. Therefore, the teacher should place the lessons that reveal the content of the subject in a logical sequence. The biggest requirement is to take into account the educational purpose of the lesson, to take into account the methodological and general pedagogical aspects of the teaching principles. A well-thought-out system of lessons on the subject depends on the correct distribution of study time to

the subjects. It focuses on creating independence of students, looking at specific examples, drawing specific conclusions, and drawing general conclusions from them. must After this knowledge is formed and consolidated in the lesson system, examples and problems should be solved. After that, it is necessary to process the skills with the help of exercises, as well as ensure that the acquired knowledge is always presented and summarized in one system.

When determining the content of a topic of the program, distributing the topic material to class times, that is, acquiring knowledge, the following main stages are considered:

1. Preparation of new material for teaching.
2. Perception of new educational material and formation of new knowledge.
3. Consolidation of knowledge and formation of skills through various exercises.
4. Repetition, generalization and systematization of knowledge.
5. Examination of knowledge and skills.

One of the factors of increasing students' activity and developing their interest in mathematics in the process of teaching mathematics is independent work with students.

In mathematics classes, independent work is carried out in preparation for learning new material, familiarization with new concepts, strengthening of knowledge, learning and skills, as well as knowledge control.

Organization of training.



The form of teaching is the organization of students' cognitive activities in a way that they can be used by the teacher in the educational process in accordance with their implementation in different conditions (classroom, production, etc.).

Organizational forms of teaching mathematics in elementary grades consist of lessons, independent performance of homework, individual work of students in groups and teams, excursions, extracurricular activities.

The curriculum is a state document approved on the basis of DTS, and its implementation is mandatory. The fulfillment of the requirements of the state standards of natural mathematics education by the students of elementary grades helps them to acquire the necessary knowledge, skills and abilities, and to form a positive attitude towards learning:

a) adaptation of students to the surrounding natural environment, formation of a student with a new social status;

b) mastering various types of activity: study, work, communication;

v) teaching self-control and determining the assessment rating;

g) a description of the specified level of a certain general natural-scientific talent and its further development.

Thus, the introduction of the state standard of natural mathematical education in the elementary grades into the educational process is not only the natural-scientific knowledge, skills and qualifications of academic subjects, but also the set of specific basic activities of the individual: work, study. -provides the

formation of qualities corresponding to cognitive, communicative, moral and physical structure.

With the increasing amount of information from day to day, it becomes clear that it is impossible to teach everything that today's students need. Mastered information is becoming outdated very quickly, because new information is coming out every day. The theory of teaching in science reveals the law of operation of methodical systems for teaching this science. Methodology develops their implementation, and technology develops methods for implementing this model.

The explanation is analyzed in the following ways:

- 1) dogmatic method.
- 2) heuristic method;
- 3) research method (problematic method);

## CONCLUSION

Working together helps to activate cognitive activity, forms the qualities of mutual control and mutual assistance in students, fulfills the educational task.

It should not be forgotten that the educational content of the entire educational process, the methods of educational work, and the careful organization of the lesson help in solving the educational tasks.

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