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Scientific Basis of Formation of Mathematical Imagination of Primary School Students

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Abstract:

This article presents ideas on the methodology of teaching mathematics in elementary grades and educational technologies, their connection with subjects, and improving the effectiveness of teaching.

Keywords: Pedagogy, psychology, primary mathematics, brainstorming.

INTRODUCTION

The methodology of teaching mathematics first of all sets the task of teaching and educating younger students in the general system.

The general methodology reflects the content and systematicity of primary school mathematics, teaches specific methods of teaching each department.

The special methodology shows the basic methods and forms of teaching mathematics, as well as the ways of organizing educational activities.

It is known that teaching is closely related to upbringing. This methodology teaches ways to combine teaching with education.

The methodology of teaching elementary mathematics is closely related to several subjects.

1) With mathematics as the basis of teaching;
2) Pedagogy;
3) Psychology;
4) With other teaching methods (mother tongue, work...).

The elementary mathematics teaching course has become an educational subject.

Teaching tasks of the primary mathematics teaching methodology:

1) implementation of educational and practical tasks,
2) it should illuminate the process of studying the system of theoretical knowledge;
3) should teach students ways to form their worldview;
4) humanization of education;
5) in the process of teaching mathematics, it shows the education of human qualities such as love for work, self-worth, respect for each other;
6) the teaching methodology indicates teaching in connection with the content of mathematics of grades V-VI, which is a continuation of mathematics of grades I-IV.

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The task of the elementary mathematics course is set before the school, such as "using new technology to provide students with thorough knowledge of the basics of science, providing them with modern socio-economic knowledge, guiding them to marriage, profession, and teaching them to make a conscious choice of professions." is to help in solving tasks.

Thus, like any other subject, the purpose of teaching mathematics in elementary mathematics is determined by the following three factors:

1. The general educational goal of teaching mathematics.

2. The educational purpose of teaching mathematics.

3. The practical purpose of teaching mathematics.

The general educational goal of teaching mathematics sets the following tasks:

a) to provide students with mathematical knowledge based on a specific program. This knowledge should provide students with sufficient information about mathematics and prepare them to study higher branches of mathematics.

In addition, on the basis of the program, students should learn to verify the reliability of the knowledge they have acquired during their studies, and master the main control methods.

b) It is necessary to develop oral and written mathematical knowledge of students

will be;

Studying mathematics should help students to master the skills of correcting speech culture in their mother tongue, expressing their thoughts clearly, clearly and succinctly.

c) to make students know real facts based on mathematical laws

to teach

By imparting such knowledge, students' spatial imagination is formed and their logical thinking develops further.

The educational goal of teaching elementary mathematics sets the following tasks:

a) formation of students' scientific outlook.

b) to cultivate students' interest in learning mathematics.

c) The task of a primary school teacher is to develop the ability of independent logical thinking in students, as well as to nurture their interest in learning the laws of mathematics.

d) formation of mathematical thinking and mathematical culture in students.

e) Expressions, symbols of actions, concepts and laws between them taught in mathematics lessons teach students to think in a comprehensive way.

f) The practical purpose of teaching mathematics in primary grades sets the following tasks:

g) to teach students to be able to apply the knowledge they have acquired in mathematics lessons to solve elementary problems encountered in everyday life, to teach them to solve practical problems specially designed to form and strengthen the skills of performing arithmetic operations in students,

h) formation of skills in the use of technical tools and visual aids in teaching mathematics. The main focus is on developing students' skills in using tables and calculators.

i) teaching students to acquire mathematical knowledge independently.

j) Pupils should, as far as possible, independently open legal relations, make generalizations as much as they can, and learn to make oral and written conclusions.

k) A necessary and important condition for the effectiveness of teaching is control over students' mastery of the studied material. Various forms of its implementation have been developed in didactics. This is to ask students orally; supervisory work and independent work; methods such as checking homework, tests, testing with technical means. Didactics depends on the type of lesson, age characteristics of students, etc. depending on it, the questions of the appropriateness of using one or another form of control, as well as the methodology of control implementation, have been sufficiently developed.

l) In the methodology of teaching mathematics in elementary school, effective means of conducting independent and control work, individual written survey of students have been created. Some didactic materials are designed to control the mastery of a limited range of problems of the program in the rating system, others are designed to control all the main topics of the elementary school mathematics course. Some didactic materials (especially those intended for a low-equipped school) contain more instructional materials, while others contain more control materials.

m) In primary school mathematics, common tasks for all didactic materials are classified by complexity. According to the idea of the creators of these materials, the completion of a certain method of the assignment on a certain topic testifies not only that the student has mastered this topic, but also that he has mastered it to a fully defined level.

n) In practice, teachers often say that one method of a task is simpler or more complicated than others. In addition, no matter how artistically structured didactic materials are, no matter how fruitful and deep ideas are implemented in their content and structure, they are still not able to quickly solve all methodological tasks, because no teaching machine can match the teacher's intuition. , that is, he cannot change his feelings.

o) Thus, didactic materials should be considered as one of the methods of controlling the level of students' mastery of educational material. At the same time, a certain method may not be the best method for this class and this teacher. For this reason, didactic materials cannot free the teacher from creating types of control for individual verification that will allow determining the level of knowledge acquisition of students.

This is one of the main tasks of general methodology.

Preparing students to learn a mathematics course.

It depends on their level of preparation for the mathematics course in solving educational tasks, which is the main task of teaching mathematics in grades I-IV.

Therefore, there is a task to determine the knowledge of those who have entered the 1st grade, to equalize the knowledge of the students of the class, that is, to transfer the knowledge of students with low knowledge to well-versed students. The teacher records the students' knowledge in a special notebook in the following order:

1. How long does he know how to count?

2. How far does he know how to add numbers?

3. How many numbers does he know how to subtract?.

4. Can it use >, <, = symbols?

5. Can it find the unknowns in given addition and subtraction with unknowns?

6. Which figures does he know the names of and can draw?

7. How long can he write numbers?

8. Can he distinguish right, left, less, more, heavy, light, equal?

9. Can it deal with units of measure such as money, price, hour, minute, length, weight?

The main work method in preparing children for teaching should be aimed at forming the skills of performing mental operations such as analysis, synthesis, comparison, generalization, classification. Such activities will greatly help the development of students' oral and written speech, and their interest in acquiring mathematical knowledge will increase.

Today, a number of developed countries have accumulated a lot of experience in the use of pedagogical technologies that increase the educational and creative activities of students and guarantee the effectiveness of the educational process, and the methods that form the basis of this experience are called interactive methods. is conducted. Below we will talk about the nature and use of some of the interactive methods used in practice.

"Brainstorming" method

This method ensures the students' activity in the training process, encourages them to think freely and frees them from the inertia of the same thinking, collects various ideas on a specific topic, as well as the initial process of solving creative tasks. serves to learn to overcome the thoughts that appeared in the stage.

The "Thought attack" method was recommended by A.F. Osborne, and its main principle and condition is to absolutely prohibit criticism of the ideas expressed by each participant of the training, and to encourage any jokes and jokes. The purpose of this is to ensure the free participation of students in the training process. The use of this method in the educational process depends on the teacher's pedagogical skills and breadth of thinking.

When using the "brainstorming" method, the number of students should not exceed 15. Training based on this method can be organized up to one hour.

"General brainstorming" method

This method was developed by J. Donald Phillips and can be used in classes of several dozen (20-60) students.

The method serves to create conditions for students to come up with new ideas. Each group of 5 or 6 students is given a different assignment or creative task that needs to be solved within 15 minutes, and one of the group members will make a report about it.

The information given by the group (the solution of the assignment or creative task) is discussed and evaluated by the teacher and other group members. At the end of the lesson, the teacher will announce the best and most unique answers among the solutions to the assigned tasks or creative tasks. During the training, the activities of the group members are evaluated according to the level of their participation.»Severe attack of thoughts» method

The «Severe Attack of Thoughts» method was based on Ye.A.Alexandrov and revised by G.Ya.Bush. The essence of the method is as follows:

- to help realize the personal potential of each student performing certain tasks among the team;

- is to create the ability of students to put forward an idea against the opinion expressed by a certain team.

Training based on the use of the «Severe attack of thoughts» method is organized in the following stages:

Stage 1: Formation of small groups of students who are mentally close to each other and are numerically equal;

Stage 2: Identifying the goals arising from the essence of the task or tasks assigned to the groups;

Stage 3: Development of specific ideas by groups

(solution of assignments);

Step 4: Discuss the solutions to the tasks, classify them into categories according to their correct solution;

Step 5: Re-categorization of the solutions of tasks, i.e. evaluation based on criteria such as their correctness, time spent to find the solution, clear and clear explanation of the solutions;

Step 6: Discussing certain critical comments about the solutions of the tasks in the initial stages and coming to a unified conclusion about them.

During the application of the method, the following situations occur:

- to achieve thorough assimilation of certain theoretical knowledge by students;
- saving time;
- encourage each student to be active;
- to form their ability to think freely.

«6x6x6» method

With the help of the «6x6x6» method, by involving 36 students in a specific activity at the same time, it is possible to solve a certain task or problem, as well as to determine the capabilities of each member of the group, to learn their views. In the training organized on the basis of this method, 6 groups with 6 participants in each discuss the problem raised by the teacher. At the end of the specified time, the teacher will reorganize 6 groups. Each of the newly formed groups will have one representative from the previous 6 groups. The members of the newly formed group report to their teammates the conclusion presented by their group as a solution to the problem and discuss these solutions together.

The advantages of the «6x6x6» method are as follows:

- encourages every member of the group to be active;
- ensures the expression of personal views by them;
- develops the skills to listen to the opinions of other members of the group;
- To be able to summarize several ideas that are presented, and also teaches to defend one's opinion.

The most important thing is that during each short time (20 minutes) the participants of the training will act as a participant in the discussion, and as a listener, and as a speaker.

This method can be used in several groups consisting of 5, 6, 7 and 8 students. However, when the «6x6x6» method is used among large groups, it is necessary to increase the time. Because in such

training, a lot of time is required for discussion and information. When the method in question is used, there is an opportunity to do one or more subjects in the training.

The use of the «6x6x6» method in the educational process requires the teacher to be active, have pedagogical skills, and also have the ability to form groups according to the purpose. Improper formation of groups can cause tasks or tasks not to be solved correctly.

Using this method, training is organized in the following order:

1. Before the lesson, the teacher places 6 chairs around 6 tables.
2. The teacher divides the students into 6 groups. When dividing the students into groups, each seat is named, and those who received the name sheets take their seats.
3. After the students are seated, the teacher announces the topic of the lesson and gives certain tasks to the groups. A certain time is set and the discussion process is organized.
4. asks them to finish the discussions.

References

1. «National Personnel Training Program» of the Republic of Uzbekistan / Perfect Generation – the foundation of Uzbekistan's development. – Tashkent: Sharq publishing-printing concern. 1997.
2. Law of the Republic of Uzbekistan «On Education» (adopted on August 29, 1997) / Perfect generation is the foundation of Uzbekistan's development. – Tashkent: Sharq publishing-printing concern. 1997.
3. Decision of the Cabinet of Ministers of the Republic of Uzbekistan «On approval of state educational standards of general secondary education» (August 16, 1999)/Public education j. 1999. No. 5