WEB OF SYNERGY:
International Interdisciplinary Research Journal
Volume 2 Issue 1, Year 2023 ISSN: 2835-3013
https://univerpubl.com/index.php/synergy

Methodology of Teaching Mathematics in Primary Grades, The Role of Mathematical Teaching in the Formation of Mathematical Ability of Elementary School Students

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Article Information

Received: November 29, 2022
Accepted: December 30, 2022
Published: January 31, 2023

Keywords: *mathematics, circle, methodology, mathematical diary, excursion, primary education, mathematical ability, mathematical teaching, education, pedagogical approach, modern education.*

ABSTRACT

In this article, the science of mathematics in primary education, its teaching, teaching methodology in the first stages, the correct organization of lessons, the role of mathematical teaching in the formation of the mathematical ability of primary school students, the importance is discussed. Throughout the article, it is emphasized that the teaching of mathematics in elementary grades, like the teaching of any other academic subject, should be addressed with education, training and practical qualities.

Must address educational, educational and practical qualities like teaching any other academic subject. The success of the implementation of the formation of the mathematical thinking of elementary school students depends on the pedagogues' specialty and their professional training.

The teaching of mathematics in primary grades is generally considered as the first step in mastering the school mathematics course. Therefore, when working in primary classes, it is necessary to take into account the general issues involved in teaching mathematics in secondary schools and correctly assess the importance of primary education in solving these issues. Many of the issues in the secondary mathematics curriculum must be mastered in the primary grades to such an extent that they remain in the minds of students throughout their lives, while other issues need to be studied in detail in the early stages of instruction in later grades. entered only for the purpose of preparation for exit; or introduced to have the opportunity to increase the level of thinking ability in the process of formation of some skills and abilities. The knowledge, studies and the above-mentioned considerations should be taken into account when it comes to the conscious and sustained acquisition of a certain amount of skills.

The mathematics course involves summarizing educational materials to the extent that students can, explaining the general principles and laws underlying the studied mathematical facts, and explaining the connections between the observed phenomena. This mainly refers to the study of the properties of actions, existing connections based on them , mathematical relationships and

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connections that are the basis of practical learning and skills that are formed in children. Teaching students to use acquired knowledge, training and skills in different conditions can be considered as a special issue of students. At the same time, the application of knowledge is one of the important means of increasing the effectiveness of children's educational work. Psychologists have proven that full-value acquisition of knowledge and educational skills can be achieved only as a result of their independent application in variable conditions. It is precisely on this basis that it can be eliminated to a large extent, which will necessarily arise when children move from elementary grades to the next grade in school, and vice versa, if the teacher does not pay special attention to comprehensive knowledge and exposes children to the same type of questions, tasks, expressions, problems, this increases the complexity of the transition to science teaching in the 5th grade. This issue is inextricably linked with the more general issue of developing children's cognitive abilities. A lot of work should be done to observe and compare, distinguish similarities and differences in the phenomena being compared, analysis, synthesis and generalization, abstraction, clarification. The issue of forming students' ability to think mathematically is inextricably linked with the issue of developing correct, clear, short mathematical speech in them. One of the main tasks of teaching mathematics is to provide students with a clear system of calculation, measurement and graphic skills, in other words, this system consists of performing the simplest operations, which has been brought to automaticity due to repeated repetitions. .

Underestimating this task actually leads to a decrease in the quality of children's knowledge. However, it is not currently possible to replace the study of elementary mathematics course with only the formation of skills and the acquisition of the same facts. Students should learn to make generalizations to the best of their ability to discover patterns and relationships independently, as well as learn to make oral and written conclusions. The primary grade mathematics program is directed to the same, in which it is clearly expressed in the increase of the theoretical level in teaching, the inextricable connection of the theory with the practice is felt. Let's give an example to clearly show what the demand for increasing theoretical thinking in teaching mathematics means. In the 1st grade, the first decimal numbers are studied sequentially according to the previously used program. When looking at each number , it is explained that 1 should be added to 1 to make 2, for example. All these facts are considered in different lessons in unrelated cases. In this approach, there were no conditions that would allow children to generalize what they had learned in previous lessons. At the same time, this approach does little to help them acquire new knowledge in the lessons dedicated to learning numbers 5 and 6. When studying the first four to five numbers, if the processes of their formation are compared (this is provided for in current programs and textbooks), children's attention should be drawn to the fact that each consecutive number is formed by adding 1 to the previous number. it can be seen that this issue becomes much easier to look at for new numbers. In fact, the student can figure out how to make the numbers 6, 7, 8, ... every time he understands how to make the next number . This example shows how important it is to compare and contrast the facts being studied, to establish connections between them and to form relevant generalizations. increases, because children, along with learning numbers, learn the principle of how natural numbers are formed, which they were not particularly familiar with before." The additional knowledge gained in this way will help each time the area of study is strengthened - both in learning to number to 20, to numbering to 100, and when learning to count . Teaching mathematics is not only the acquisition of certain knowledge and skills, but also the general development of their cognitive abilities, such as perception, memory, thinking, and imagination. Purposeful work in this direction allows them to perform mental operations such as learning important methods of mental activity (analysis, synthesis, comparison, generalization, summarization). In continuous connection with the issue of formation of mathematical thinking in children, it refers to the formation of oral and written mathematical speech with its own qualities such as conciseness, simplicity, comprehensibility, completeness. It is not enough to teach students to apply their knowledge in different conditions.

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MIMoro and AMPishkalo rightfully point this out. "This is the first job that directs students to polytechnic training. At the same time, the application of knowledge is one of the important means of increasing the effectiveness of students' academic work . Psychologists can achieve full mastery of knowledge, skills and abilities only as a result of their independent, active application in changing conditions.

In order to successfully teach mathematics to elementary school students, a teacher who starts work must master the developed system of teaching mathematics, that is, the methodology of teaching mathematics in elementary grades, and on this basis, independently create should start working.

"Method" is a Greek word, and "method" means way. Mathematical methodology is a branch of pedagogic science that is part of the system of pedagogic sciences and researches the laws of mathematics at a certain stage of the development of mathematics in accordance with the educational goals set by society.

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

1. Justification of the goals of teaching mathematics . (why is it taught).
2. Scientific development of the content of mathematics teaching (that is, which material from mathematics is studied in elementary grades, why this particular material is chosen, at what level of generalization each individual issue of the course is studied in elementary grades, in what order the topics are studied , is shown to be the most rational).
3. Scientific development of teaching methods. (how to teach, that is, what should be the methodology of educational work so that students acquire the knowledge, skills, skills and mental abilities that are needed today? For example, how to learn to add and subtract numbers in 10 'need to learn, including how to expose the permutation property of addition in this topic?).
4. Development of teaching tools - textbooks, didactic materials, instructions - manuals and technical tools (teaching with what?). need !
5. Scientific development of the organization of education (how to conduct the lesson and extracurricular forms of education ? What organizational methods should be used to conduct educational work ? How to more effectively solve educational and educational issues in the educational process need?).

Thus, the goals, content, methods, means and forms of teaching are the main components of the methodical system.

The purpose of teaching mathematics.

Like any other educational subject, the primary course of mathematics is determined by the following three factors:

1. The general educational purpose of mathematics education.
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) Providing students with mathematical knowledge based on a specific program. This knowledge should provide students with sufficient information about mathematics, prepare them to study higher branches of mathematics.

In addition, on the basis of the program, students should learn to check the reliability of the knowledge they have received during the study, master the main methods of control.

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b) Students' oral and written mathematical knowledge should be developed.

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

d) Teaching students to know real facts based on mathematical laws.

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

a. Formation of scientific worldview in students.

b. Cultivating students' interest in learning mathematics

The task of a primary school teacher is independent logic in students

thinking skills, it is to educate their interest in learning the laws of mathematics.

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

Phrases, symbols, concepts and laws learned in mathematics lessons teach students to think critically. The practical purpose of teaching mathematics in primary grades sets the following tasks:

a. To teach students to be able to apply the knowledge they have acquired in the mathematics lesson to solving 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,

b. 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 calculation tools. d. Teaching pupils to acquire mathematical knowledge independently. Pupils should, as far as possible, independently discover legal relations, make generalizations as much as they can, and also learn to make oral and written conclusions.

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 asking students verbally; supervisory work and independent work; methods such as checking homework, tests, testing with technical means. In didactics, the issues of appropriateness of using one or another form of control depending on the type of lesson, age characteristics of students, etc., as well as the methodology of implementation of control, have been developed in depth. effective means of 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 a 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-resource school) contain more instructional materials, while others contain more control materials.

Common for all didactic materials in primary school mathematics is the classification of tasks by complexity. According to the ideas of the creators of these materials, the completion of a certain method of the task on a certain topic testifies not only to the student's mastery of this topic, but also to the fact that he has mastered it to a fully defined level.

In the methodology of teaching mathematics, the meaning of the concept of "level of mastery of educational material" is not fully revealed. In the manuals for teachers, there are no clear criteria that allow to determine to which level one or another task of the didactic material is suitable.

In practice, teachers often say that some methods of a task are simpler or more complex than others. In addition, no matter how artistically designed the didactic materials, 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 overcome the Teacher's

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intuition. , that is, he cannot change his feelings.

Any mathematical games are based on some mathematical theory. They develop children's thinking and increase their activity in learning abstract concepts. Because in them, the speed of verbal calculation, the sharpness of the sense of competition, the desire to reach the goal in the most correct way are clearly visible. In mathematics, the game increases his interest in science, which makes him always want to do it seriously. In Pascal's words, mathematics is such a serious science that we should not miss the opportunity to make it a little fun. Primary classes were canceled for 4 years of education instead of three years. In connection with the transition of primary classes from mathematics to new programs, a new methodical system was developed.

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, for this teacher. For this reason, didactic materials cannot free the teacher from creating types of control for individual verification that will allow students to determine the level of knowledge acquisition. This is one of the main tasks of general methodology.

2. Preparing students to study 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 the first graders, to equalize the knowledge of the students of the class, that is, to transfer the knowledge of the students with low knowledge to the students who know well. 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 many numbers can he add?
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. What figures does he know and draw?
7. How many numbers can he write?
8. Can he distinguish right, left, less, more, heavy, light, equal?
9. Can you deal with money, price, hour, minute, length, weight units?

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 works greatly help the development of students' oral and written speech, and their interest in acquiring mathematical knowledge increases.

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