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PAPER

CURRENT ISSUES OF TEACHING MATHEMATICS IN SCHOOLS

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Abstract

The article discusses the goals and objectives of teaching mathematics in general secondary schools, modern methods, and current problems and shortcomings in this regard. The article also discusses the various goals of teaching mathematics and shows ways to improve mathematical literacy in students.

Key words: Human thinking, mathematical knowledge, visual aids, tables, competencies, logical thinking, equation, development, skill.

INTRODUCTION

In our republic, economic, political, and legal conditions have been created for the continuous development of general secondary schools. In particular, a number of regulatory documents adopted by our government have initiated a number of measures to raise education to a qualitatively new level. In particular, special attention is paid to teaching in primary education, and training future primary school teachers as qualified personnel based on modern requirements is considered one of the urgent problems of today. Taking this into account, the President of Uzbekistan Sh.M. Mirziyoyev emphasizes the following: "It is necessary to improve school curricula based on advanced foreign experience, revise curriculum and subjects, bring them into line with international standards, and improve the quality of textbooks and literature.

We need to clearly define the priority areas in the field of science for our country. No country can develop all areas of science at the same time. Therefore, we are also in favor of developing several priority areas of science every year.

It is known that mathematics is an abstract science. Its content is the product of human imagination and logical thinking from beginning to end. Such an abstract structure of science, its self-enrichment, that is, the ability to create new mathematical concepts and their properties from known properties, has long served to develop human mental abilities. Even mathematical problem-solving competitions were a means of testing human intelligence in the past. From this, it becomes clear that the main task of mathematics is to teach students to think, to think correctly, logically and to observe. No other subject can force students to think and reason as much as mathematics. In mathematics lessons, students learn to think correctly and logically by solving various problems, problems and puzzles.

LITERATURE ANALYSIS AND METHODOLOGY

The main task of teaching mathematics at school is to ensure the conscious and solid acquisition of mathematical knowledge and skills that are used in everyday life and work, appropriate to the student's age, and necessary for continuing education in the future. The science of mathematics teaching methodology is directly based on philosophy, psychology, pedagogy, didactics, mathematical sciences, drawing, logic, history and other disciplines.

When researching problems related to the theory and teaching of mathematics, it is appropriate to take into account the specific characteristics of mathematics and its teaching.

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DISCUSSION

In modern education, students are given the opportunity to work on themselves, expand and deepen their knowledge outside of the classroom. Mathematics, like other sciences (physics, chemistry, history, etc.), studies real existence. It studies the structure of real existence and the laws that govern it. It creates various models of real existence. If natural sciences are based on experiments in their research, mathematics is not based on experiments. In mathematics, it is possible to resort to experience in order to understand and imagine problems related to the connection of theory with practice. However, the experimental method is not accepted for proof in mathematics. While natural sciences conduct research to find unknown properties of real existence, mathematics finds new properties in the considered models of the material world and creates new models. An example of this is mathematical modeling, which allows for a holistic interpretation of phenomena in existence. Mathematics belongs to the group of exact sciences, and its study and research have specific characteristics that distinguish it from other sciences. In particular:

1) studies the abstracted properties of mathematical objects. Mathematical objects are studied in isolation from their content, that is, properties such as the taste, smell, hardness or softness of the object are not taken into account. Because these properties of a mathematical object are generalized, abstracted, and a mathematical theory is created using them. Otherwise, a theory cannot be created.

2) Mathematical conclusions (results) are mainly obtained by logical deduction. A result obtained by the experimental method is not considered correct for mathematics.

3) mathematical conclusions are irrefutable conclusions.

4) the abstractions that arise in mathematics develop in a pagan way, that is, they move from abstraction to abstraction.

5) mathematical results are universal in nature and can be applied to other areas as well.

The purpose of teaching mathematics in secondary schools is determined by the following three factors:

1. The general educational purpose 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 a system of mathematical knowledge based on a specific program. This system of knowledge should provide students with sufficient information about mathematics and prepare them for studying higher branches of mathematics. In addition, based on the program, students should learn to check the reliability of the knowledge they have acquired during their studies, that is, master the basic methods of proof and control.

b) To develop students' oral and written mathematical knowledge. The study of mathematics should help students to acquire the skills of speaking without errors in their native language, to express their thoughts clearly, clearly and concisely. This means to achieve that students can speak each mathematical rule correctly in their native language and to comprehensively form their ability to write the mathematical expression of this rule correctly using formulas.

c) Teaching students to know real truths based on mathematical laws. Here, it is intended to provide students with knowledge in a volume that allows them to understand the spatial forms of everything that occurs in the real world, from the simplest to the most complex phenomena, and the quantitative relationships between them. By providing such knowledge, students' spatial imagination is formed and their logical thinking is further developed.

The educational goal of teaching mathematics is to:

a) Form a scientific worldview in students. This idea is implemented on the basis of the theory of knowledge.

b) To cultivate students' interest in learning mathematics. As we know, in mathematics lessons, students learn to draw conclusions independently from the first days of study. They draw conclusions first as a result of observations, and then as a result of logical reasoning. These conclusions are confirmed by mathematical laws. The task of a mathematics teacher is to develop students' independent logical thinking skills and to cultivate their interest in learning the laws of mathematics.

c) Formation of mathematical thinking and mathematical culture in students. Each mathematical conclusion studied in mathematics lessons requires rigor, which in turn is expressed by a large number of mathematical concepts and laws. As students gradually learn these laws, their logical thinking develops, and a culture of mathematical inference is formed. Mathematical culture is formed in students by teaching them to correctly express the thoughts they want to express in symbolic language, and vice versa, to express mathematical laws expressed in symbolic language in their native languages.

The practical goal of teaching mathematics is to:

a) Teach students to apply theoretical knowledge gained in mathematics courses to solve elementary problems encountered in everyday life. This mainly involves teaching students to solve specially designed practical problems in order to develop their ability to apply theoretical knowledge to practice, to form and strengthen their skills in performing operations on various numbers and mathematical expressions.

b) To develop skills in using technical means and visual aids in teaching mathematics. This involves developing students' skills in using technical means, mathematical visual aids, tables, and calculation tools in mathematics lessons.

c) Teaching students to independently acquire mathematical knowledge. This mainly involves developing students' skills in reading and studying independently from textbooks and popular scientific mathematics books.

As we know, the science of mathematics teaching methodology is a specific branch of pedagogy, which deals with the study of the rules of teaching mathematics. In the process of studying the laws of teaching mathematics, mathematics teaching methodology is closely connected with the sciences of pedagogy, logic, psychology, mathematics, linguistics, and philosophy. In other words, the problems of teaching mathematics at school are solved in close connection with the disciplines of logic, psychology, pedagogy, mathematics and philosophy. The methodological basis of mathematics teaching methodology is based on the theory of knowledge. The science of mathematical methodology studies the purpose, content, form, method of mathematical education and the laws of applying its tools to the teaching process. The science of mathematics is also closely related to the sciences of physics, drawing, chemistry and astronomy. The close connection of mathematics with other disciplines is carried out in the following two ways:

1) Adapting the curricula of disciplines to study without violating the integrity of the mathematical system.

2) Using materials in the mathematics course that are related to the study of mathematical laws, formulas, and theorems in other disciplines.

Currently, the issue of harmonizing the mathematics curriculum with other subjects has been solved quite successfully. For example, students begin to learn some of the information used in physics about functions and their graphical representation starting from the 7th grade. Much of the knowledge about geometric constructions taught in grade 8 is rich material for the subject of drawing, and the task of drawing is to consolidate this knowledge through the performance of various drawing tasks. It is difficult to clearly indicate the use of other subjects in mathematics lessons in the program, this is done by the

teacher himself, that is, he should take it into account when planning the educational material and preparing for the lesson. For example, during the study of equations, equations that reflect the relationships between physical quantities can also be solved, that is, the heat balance equation, the equation of linear expansion from heat, and similar equations. It is advisable to use chemistry and physics problems when studying percentages, proportions, and other sections of the program (mixtures, mixtures, and the like), for example:

1) How much of the solute should be added to 240 g of water to make a 20

2) A 400 g solution of 5% was boiled to 200 g. What is the acidity of the solution now?

Using materials from related subjects in mathematics lessons further strengthens the interdisciplinary connection.

CONCLUSION

It is worth noting that in order to study any natural phenomenon and process using mathematics, it is necessary to study this process in a simplified way. From its many properties, it is necessary to isolate those that are necessary for us, and to ignore some of them. The most important thing for us is to leave only those that are necessary for expressing the existing phenomenon and process in the language of mathematics. The expression of phenomena and processes in this way in the language of mathematics is called a mathematical model.

Forms the skills of using technical means and visual aids in teaching mathematics. This includes developing students' skills in using technical means, mathematical visual aids, tables, and calculation tools in mathematics lessons. To teach students to independently acquire mathematical knowledge. This mainly consists of forming students' skills to independently study textbooks and popular scientific mathematics books. Therefore, the main task of teaching mathematics in the secondary general education system should be to develop students' logical thinking and correct observation skills (competences). General subject-related competencies define the theoretical knowledge and practical skills that students in mathematics should know and master, while cognitive subject-related competencies define the requirements for logical thinking, reading, and the practical application of acquired knowledge and skills in science, as mentioned above.

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