



USE OF ELEMENTARY MATHEMATICS SCIENTIFIC RESEARCH METHODS

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Annotation

This article discusses the importance of thinking in improving the mathematical literacy of primary school students, determining ways to solve various problems and assignments, using comparison methods, and developing the skills to make the right decision.

Key words

mathematical literacy, thinking, logical thinking, reasoning, skills, observation, experience, measurements, analysis (analysis) and synthesis, problem situation, number composition

The science of mathematics uses the methods of "scientific research" in the process of studying the spatial forms of things in the existing material world and the quantitative relationships between them. They include methods of analysis and synthesis.

Methods of analysis and synthesis are manifested in different forms in the teaching of mathematics in elementary grades. For example, it is possible to show the method of solving problems, mathematical concepts, the method of studying their properties, and research methods.

Analysis and synthesis are inseparable, they complement each other and form a single analytical-synthetic method. For example, the problem is divided into several simple problems with the help of analysis, and then the solutions of these simple problems are combined with the help of synthesis.

It is necessary to use scientific research methods such as observation, experiment, measurements, analysis and synthesis, induction and deduction, comparison and analogy in the formation of minor research skills in students. The content of students is not only to form knowledge and skills, but also to apply them in life situations. The method of comparison consists in distinguishing the considered numbers, arithmetical examples, similar and different symptoms of the problem.

Comparison consists in mentally distinguishing the similarities and differences of the studied object. Comparison is used as a research method not only to study the mathematical properties of objects, but also to teach these properties.

When using the comparison, the following requirements must be met:

The comparison should be carried out on the basis of a plan, that is, the steps and properties of the comparison should be clearly defined. For example, comparing the faces when the angles have the same perimeter, comparing the internal angles according to the sum. It is necessary to pay more attention to practice and to some extent abandon the approach based on providing students with ready-made learning materials. It is recommended to use more interactive methods such as cases, research, projects, small educational discoveries in mathematics classes. In the formation of small research skills in students, it is necessary to use scientific research methods such as observation, experiment, measurements, analysis and synthesis, induction and deduction, comparison and analogy. The content of the students is not only to form knowledge and skills, but also to apply them in life situations. The method of comparison consists in distinguishing the considered numbers, arithmetical examples, similar and different symptoms of the

problem.

Methods of analysis and synthesis are manifested in different forms in the teaching of mathematics in elementary grades. For example, it is possible to show the method of solving problems, mathematical concepts, the method of studying their properties, and research methods.

At first, analysis is considered as a way of thinking, moving from the whole to parts, and synthesis is considered as a way of moving from parts to the whole. Later, analysis is considered as a way of thinking, and it is considered as a way of thinking that consists of moving from the result to the cause that caused it. In the method of synthesis, the transition from one stage of thinking to another is almost blind, these transitions are more unclear to the student. In the synthesis method, we answer the question of what we can find based on the givens.

It is known that the object of studying mathematics consists of the spatial forms of things in matter and the quantitative relationships between them. In the process of determining the quantitative relationships between these forms, mathematicians use scientific methods of research as a tool. When thinking through the method of analysis, the student must answer the following question: "What do you need to know to find the unknown you are looking for?" .

From a psychological point of view, the method of analysis is considered as a method of searching from the whole to the parts. In the analytical method of thinking, each step has its own basis, that is, each step is based on the rules we already know.

Analysis and synthesis are inseparable, they complement each other and form a single analytical-synthetic method. For example, with the help of analysis, a problem is divided into several simple problems, and then with the help of synthesis, the solutions of these simple problems are combined.

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In the method of synthesis, the transition from one stage of thinking to another is almost blind, these transitions are more unclear to the student. In the synthesis method, we answer the question of what we can find based on the givens.

Sample tasks:

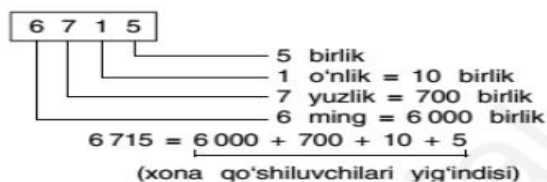
For example, 1. Distinguish the composition of the number 4752?

Jav ob: $(4000+(700+(50+2)))=4752$

How many room units are there in each room of 2.348?

Answer: There are 3 units, 3 hundreds, 4 tens, 8 units. $(300+(40+8))=348$

3. Write the numbers in the form of the sum of room additions! a) 6715;



b) 8536 divide the number into decimal parts as follows:

$$8536 = 8000 + 500$$

$$+30 + 6$$

(xona qo'shiluvchilari yig'indisi)



Analysis is understood as a method of research, based on the concept of number and measurement, and consists in the quantitative study of an object. Synthesis is a method of thinking that consists in studying the qualitative properties of an object.

In teaching mathematics, analysis and synthesis are used in the meaning of the second level of understanding. These methods are manifested not only as methods of scientific research, methods of studying educational material, but also as forms of thinking process.

The analysis is used in two different forms, that is, in the form of a filter and through synthesis. In the first form of analysis, the person solving the problem randomly tries available methods one after the other in search of a solution. The analysis and synthesis part of scientific research methods is used to divide numbers into units and write them as a whole.

Write the smallest and largest one-digit, two-digit, three-digit and four-digit numbers in the form of numbers;

a) What number is formed from one thousandth, seven hundreds, seven tens, and five ones? Answer: 1775

b) What number is formed from three thousands, four hundreds, five tens, and two units? Answer: 3452

c) What number is formed from five thousandths, six hundredths, nine tens, and three units? Answer: 5693

d) What number is formed from eight thousandths, five hundredths, six tens, and three units? Answer: 8563

e) What number is formed from six thousandths, four hundredths, seven tens, and two ones? Answer: 6472

2. 8941 books were brought to the school library. How many thousandths, hundreds, tens, units are these? Answer: (8 thousands, 9 hundreds, 4 tens, 1 unit)

3. 2 thousand, 6 hundreds and 9 units of books were brought to the school library. How many books are listed? Answer: 2609

The main general issues of the method of teaching comparison in solving problems are related to the features of the method of looking at different types of problems. The next step in mastering problem solving by going from the sought to the given is to solve the reverse direction of solving the content problem (analysis) with a complete oral analysis, after which the oral formulation of the solution plan (synthesis) and perform all actions to get an answer to the question of the issue. It is useful to check the solution of the problem and create a new problem, this problem will be included as answered, and one of the given ones will be searched.

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