ADVANTAGES OF USING SOME SCIENTIFIC RESEARCH METHODS IN MATHEMATICS TEACHING

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Annotation. *An this article some recommendations about organizing math lesson at school are given. There are some instructions about lightening the numerical and complex number by comparative method at the 6th form. Teaching mathematics requires a high level of academic as well as a high level of professionalism. In teaching this unique subject, the teacher faces a number of challenges, using a variety of research methods and new pedagogical technologies. The generalization method covers all aspects that are important for students of mathematics. In this method, the educator applies an approach to the transfer of knowledge and skills from the characteristics of the unit to the general characteristics. This article presents the advantages of the method of scientific research-generalization method in the study of mathematics and their application in the proof of theorems, in the solution of geometric problems.*

Key words: *method of education, didactic, mathematical object, comparative method, numeric, complex number, weird of Eratosfen.*

As we know, in methodological manuals until the 19th century, the concept of "method" was used as a description of the topic describing the main content of the mathematics course. For example, "Method of learning trigonometric theorems", "Method of learning vector quantities". In modern didactics, including mathematics, the concept of method is one of the main concepts.

The word "method" is a Greek word that means "to show the way". The concept of "educational method" is considered one of the main concepts in the modern science of methodology and didactics. The comparison method is one of the main scientific research methods. According to it, the subject materials covered in the course of the lesson are compared and explained based on each other. Educators should express their knowledge and skills in an independent way. The extent to which the teacher and the learner agree, argue and discuss the lesson determines how effectively this method is used [1].

DEFENITION

The method of determining the similar and different sides of things in the studied mathematical object should be able to explain the aspects and properties of the comparison method to the learners.

The following principles are followed when applying the comparison method to the subject materials studied in mathematics classes:

1) The mathematical concepts being compared must be of the same gender;

2) The comparison should be in relation to the main properties of the objects of the studied mathematical object.

I would not be wrong to say that it is appropriate to use the method of comparison in the teaching of numbers in the teaching of prime numbers and complex numbers in the 6th grade mathematics. Because these two concepts are scientifically the same. When the teacher explains each of these two concepts to the learner based on their common and different aspects, this situation will help the student to acquire knowledge thoroughly. When explaining the common aspects of these two concepts, the teacher must share the opinion of the students. This encourages the student to think creatively. It is appropriate for him to explain the different aspects [2-4].

Let a sequence of natural numbers 1,2,3,4,5,6,7,8,9,... be given. We divide some terms of the sequence into multipliers. Multipliers of the resulting spread should be different from this number itself. For example: $12 = 2^2 * 3, 21 = 3 * 7$, etc. Such numbers have more than two divisors. Some natural numbers are not divisible into multipliers in the above sense. For example, 5,7,11,13,17,19,…etc. Such numbers have only two divisors: one and the number itself. Numbers of the first kind are called prime numbers. The natural number 1 is conditionally considered neither a prime nor a complex number. Now what do these two concepts have in common? They both belong to the set of natural numbers; Both prime numbers and complex numbers are infinite. The difference between prime and complex numbers is that a prime number has only two divisors, i.e. 1 and itself. For a complex number, this concept is not appropriate [5-8].

Thus, the sequence 2,3,5,7,11,13,17,19,... represents a sequence of prime numbers. The great mathematician Euclid, who lived three centuries before our era, proved for the first time that this sequence is not finite, that is, there are an infinite number of prime numbers. Until that time, scientists have recognized several methods of compiling a table of prime numbers.

The simplest and, at the same time, the oldest considered method of creating a table of prime numbers belongs to Eratosfenes, a mathematician and astronomer who lived in Crenanki, Greece (276-193 BC). The method he proposed is as follows: for example, let's say it is required to make a table of prime numbers up to 50. We write down the sequence of natural numbers from 1 to 50 and delete the complex numbers to separate the prime numbers from them. 1 is not a prime number, it cannot be deleted. The first prime number is 2, then every second prime number is deleted (2 is not deleted). As a result, only complex numbers are deleted. The second undeleted number is 3, it is a prime number. After that, every 3rd natural number is deleted. The next undeleted number is 5, then every fifth number is deleted in the same way as above, and so on. In our example, after the 4th deletion, only prime numbers remain. The table of prime numbers compiled in such a way is known as "Eratosthenes' table". In turn, a sequence of complex numbers is formed in the table compiled by Eratosthenes. Eratosthenes gives the table of prime

numbers only for numbers up to 1000. Currently there is a table of prime numbers up to 100000000.

In this way, the pedagogue explains the concepts of prime numbers and complex numbers to students. These two concepts are side concepts, one cannot be explained without the other. That is, when creating a table of prime numbers, one must have an understanding of complex numbers. I think the advantage of the comparison method can be seen at this point. That is, in order to explain one concept, the second concept is also explained in turn. Here, the pedagogue is definitely required to have scientific potential and the ability to attract the student's attention during the lesson. The ability of the teacher to justify the differences between the two concepts will definitely motivate the student to think independently. The teacher tells the students a number of numbers and asks them to distinguish a complex number from them and explain their opinion. At the same time, the student's ability to think creatively grows. Skills about the difference between prime and complex numbers will be strengthened. In order to cover all the students in the class, dividing them into groups will also serve to make the lesson process more effective. For example, students of the class are divided into two groups, the first one is given the task of finding prime numbers, and the second one is given the task of finding complex numbers. For example, let the first group divide the prime numbers between 370261 and 370373. The second group is required to separate complex numbers between 46523 and 46875 [9-12].

In this method, all students in the class are included, and the lesson process is conducted in a debate-like manner. No matter what the name or form of the educational method is, it should first of all serve to provide knowledge to the student. The comparison method, in turn, is a method that helps the student to gain knowledge. For this, a strong scientific level, pedagogical skills, organization and the ability to attract students are required from the pedagogue. The lesson is considered appropriate only when these qualities are available to the teacher. The lesson is the basis of the educational process conducted in schools. That is why the topic covered during the lesson is a process that can positively affect students in terms of education and training. Along with education, a school student also takes on qualities such as education and human qualities from the school. In the teaching of complex mathematics, interactive methods serve to provide the learner with perfect, complete knowledge and skills.

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