



THE ROLE AND IMPORTANCE OF SCHOLARS' SCIENTIFIC HERITAGE IN IMPROVING THE EFFECTIVENESS OF EDUCATION

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ABSTRACT

This article describes the possibilities of using historical materials in primary school lessons. Additionally, the types of historical materials and the features of their use are examined using classroom examples.

KEYWORDS: Ability, imagination, logic, comparison, intellectual.

INTRODUCTION

From the first years of human life until old age, one constantly encounters mathematics, refers to numbers and mathematical laws. The use of mathematical foundations in our way of life has become customary and natural for us. When we look at the history of mathematics as a science, we can understand that the role of mathematics in human life is extremely important. As proof of this view, it is appropriate to cite the following statement by the famous German mathematician G.W. Leibniz: "Anyone who wants to limit themselves to today without knowing the past will never understand it." Indeed, knowledge obtained from the history of mathematics development helps to understand it better. Only as a result of comprehensively comparing achievements of the past with today's requirements did great mathematicians find the most perfect ways to solve specific problems. For a child, comparing the history of the emergence of mathematical knowledge with the facts presented in mathematics curricula not only strengthens cognitive interest in science, but also deepens understanding of the material being studied, broadens their worldview and increases their general culture. Along with developing children's consciousness, mathematics creates a foundation for rational thinking and intellectual development in educational activities. The science of mathematics, which forms mathematical logic, trains our consciousness, enabling us to compare various concepts and consciously understand them. In other words, knowing mathematics does not allow you to be deceived; unfortunately, millions of people who do not know logical calculations and who invested their contributions in financial pyramids have been deceived. Mathematics is not just formulas and calculations, but logic and order arising from their rules and functions. Mathematical knowledge allows a person to think correctly, formulate thoughts, maintain complex sequences in the beginning, and build relationships between them.

The issue of opportunities and necessity of studying the history of mathematics in school mathematics lessons has been covered in the works of famous methodologists since the end of the 19th century. The introduction of elements of the history of mathematics in teaching pursues the following goals: creating a holistic picture of the world; increasing interest in mathematics and motivation to study the subject; the connection of mathematical culture with universal human culture; "synthesis of practical work and abstract mental labor." If we combine

all these ideas, the use of historical material in lessons demonstrates the connection of mathematics with human culture, and its development brings mathematics closer to life, to the reality around us, which helps increase students' interest in knowledge.

Despite the interest in introducing historical information into mathematics lessons, little attention is paid to the possibilities of selecting data for their use. Moreover, in most studies, attention is focused on this problem in upper grades, while primary education remains outside attention. The development of mathematics itself follows the same path as the gradual development of a young student. Humans acquired initial mathematical knowledge through practical activity, and the use of improvised means became a vital necessity. Therefore, when teaching mathematics to a young school student, one must rely on practice.

Studying the history of mathematics allows us to bring mathematics closer to life and abandon the idea of mathematics as a complex science. It is necessary to show the connection of mathematics with other sciences and with art. As a rule, it is proposed to conduct conversations on historical topics in mathematics lessons and provide some historical information. Of course, this encourages students to study mathematics, but these are not all the possibilities of using historical material. Students should be given assignments to work on the etymology of mathematical concepts as practice-oriented tasks, which in turn helps develop a valuable attitude toward mathematics.

Analysis of curricula and methodological literature showed that the following possibilities exist for historical materials available for study in 3rd grade: information from the history of mathematical concepts, brief facts; information about mathematicians' lives, practical application of ancient counting methods, ancient measurement tools and units of measurement, as well as tasks related to important historical dates for separate groups, and tasks expressed with factual information from the history of a person or country.

Below, we present examples of historical materials that can be used in mathematics lessons in 3rd grade. The history of the emergence of numbers called Arabic numerals in the 5th century BC, the history of mathematical instruments - ruler, protractor, compass, etymology of terms, for example, compass - derived from the Latin word for "circle" - meaning an instrument for drawing circles and determining segment length. On the territory of France, on Gallic Hill, an iron compass was found (1st century AD). Counting with fingers made it possible to construct multiplication tables. These include doubling, tripling, multiplying by six, by nine, finger multiplication technique, and so on. I.Ya. Depman wrote about the relationship between finger counting and modern arithmetic learning: "Ten fingers are the standard set with which primitive man compared every other set. Every time we advise a student to count with fingers, we recall the historical form of finger counting." Let's give an example of finger multiplication to find the product of 7 and 8. Let's extend 3 fingers on one hand and 2 fingers on the other hand. On the first hand, 2 fingers remain bent, and on the second hand, 3 fingers remain bent. The sum of the number of extended fingers gives 5 tens of the required product, the product of the number of bent fingers 2 and 3 equals 6, the number of product units: $7 \cdot 8 = 5 \cdot 10 + 6 = 56$. Familiarization with ancient units of length and mass measurement expanded students' worldview, helped them understand the need for generally accepted units of measurement, and helped improve skills in converting values from one unit to another. Children were amazed that length and mass measurements varied by place and time. For example, the old Belarusian

length measurement "verst" was approximately 1554 m, while the old Russian verst was 1066 m. The old Russian unit of the same name was slightly more than 4 g.

In lessons, students can also become acquainted with interesting facts from the lives of famous mathematicians. Practice shows that children have different abilities for learning mathematics. And, perhaps, this cognitive information of a historical nature helps the child remember the material better. One of the ways to overcome difficulties is to present information that is difficult for students to understand in such an interesting way. Their systematic and purposeful use in teaching mathematics also allows diversifying the learning process itself, making it meaningful and interesting for students, and enhancing its developmental function. Studying the history of the subject under consideration helps to master various concepts more fully and deeply, increases understanding of the development patterns of a particular concept and science in general.

Presenting historical information in an interesting way can also be in the form of an excursion into history, pictures, slides, video materials. The means and form of presenting historical material change depending on the children's age: in grades 1-2, short conversations, pictures, and illustrated stories are characteristic, while 3rd grade students have the opportunity to independently search for information from history. Students like to prepare presentations, projects, participate in extracurricular activities, demonstrate visual displays, or show a method of action. Thus, the use of historical materials in mathematics lessons creates a successful foundation for developing students' cognitive interest.

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