METHODOLOGY OF TEACHING ELEMENTARY SCHOOL STUDENTS TO MULTIPLICATION AND DIVISION OUTSIDE THE TABLE

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oliy ta'lim muassasasi,
Maktabgacha-Boshlang'ich ta'lim va jismoniy tarbiya
kafedrasi o'qituvchisi

Annotations: In the article, the authors analyze different methodological approaches to the out of the table multiplication and division's study in primary school. The above analysis reveals the peculiarities of organizing the junior schoolchildren's educational activity in mastering the skills and abilities for these calculation's cases. Updated and compared in the framework of different training systems: traditional and developing.

Key words: the traditional system of training, the developing training, the out of the table multiplication and division, the computational skill.

Аннотация: В статье авторы анализируют разные методические подходы по вопросу изучения внетабличного умножения и деления в начальной школе. Приведенный анализ раскрывает особенности организации учебной деятельности младших школьников в овладении навыков и умений на данные случаи вычисления. Актуализированы и проведено сравнение в рамках в разных систем обучения: традиционной и развивающей.

Ключевые слова: традиционная система обучения, развивающее обучение, внетабличное умножение и деление, вычислительный навык.

Annotatsiya: Maqolada mualliflar boshlang'ich maktabda jadvaldan tashqari ko'paytirish va bo'linishni o'rganishning turli uslubiy yondashuvlarini tahlil qiladilar. Yuqoridagi tahlil kichik maktab o'quvchilarining ushbu hisoblash holatlari bo'yicha ko'nikma va malakalarni o'zlashtirishda o'quv faoliyatini tashkil etish, turli ta'lim tizimlarida yangilangan va taqqoslangan: an'anaviy va rivojlanish xususiyatlarini ochib beradi.

Kalit so'zlar: an'anaviy ta'lim tizimi, rivojlantiruvchi ta'lim, jadvaldan tashqari ko'paytirish va bo'lish, hisoblash qobiliyati.

A special place in teaching mathematics to younger schoolchildren is occupied by the development of oral computational skills. Computational culture is that stock of knowledge and skills that is widely used and is the foundation for the study of mathematics and other academic disciplines.

According to the requirements of the, primary schoolchildren must be able to perform oral arithmetic operations with numbers and numerical expressions. However, annual tests of mathematics learning in primary schools indicate a deterioration in the quality of students' calculations. Therefore, equipping students with strong computational skills continues to be a major pedagogical challenge. To solve this problem, the teacher needs to study various methods, take a critical approach to understanding and processing information, selecting techniques and tools that can have a positive impact on the learning process of younger schoolchildren. As is known, in the methodology for developing oral computational skills and abilities, there are two approaches - traditional (M.I. Moro, M.A. Bantova, A.V. Beloshistaya, A.M. Pyshkalo) and non-traditional (N.B. Istomina, L.V. Zankov, V.V. Davydov) whose fundamental difference lies in the organization of educational activities of younger schoolchildren.

"Out-of-table multiplication and division" is one of the most difficult topics in second and third grades. The success of primary school students in multiplying and dividing multi-digit numbers will largely depend on the mastery of this topic. Non-tabular cases of multiplication and division (within 100) include cases of multiplying a two-digit number by a single-digit number (30 2; 243) and multiplying a single-digit number by a two-digit number (230; 324), as well as cases of dividing a two-digit number by a single-digit number (60:3; 72 :6) and division of two-digit numbers (80:40; 81:27).

The primary school student must perform non-tabular cases of multiplication and division orally, using various computational techniques. The basis of computational techniques for extra-tabular multiplication and division are the rules (properties) of arithmetic operations, as well as knowledge of tabular multiplication and division, knowledge of numbering (bit composition of numbers).

The main way to introduce younger schoolchildren to computational techniques for non-tabulated cases of multiplication and division according to the traditional teaching system is to show a sample action and reinforce it in the process of performing training exercises. The traditional teaching system involves step-by-step work aimed at developing a computational technique for off-table multiplication and division.

The first stage is preparation for the introduction of a new computational technique, i.e. acquaintance with the properties (rules) of arithmetic operations, which are the basis of new types of calculations.

The second stage is to familiarize students with solving examples of off-table multiplication or division. At this stage, students learn the essence of the technique for one or another case of off-table multiplication (division), i.e. what operations need to be performed, in what order to perform them and why this is how you can find the result in solving these examples.

The third stage is to consolidate the ability to solve examples of a new type of extra-table multiplication (division) and develop computational skills in solving them. At this stage, students must firmly grasp the algorithm of operations that make up a computational technique and perform these operations orally as quickly as possible.

Let us consider in detail the methodology of work at each of the above stages using the example of studying with children the off-table case of multiplying a two-digit number by a single-digit number. At the first (preparatory) stage for learning this type of multiplication, the following exercises are useful:

- Replace the numbers with the sum of the digit terms: 34, 28, 17, etc.

- What number is this?

20+4=... 8+20=...

30+8=...90+6=...

At this stage, children become familiar with the rule for multiplying a sum by a number, which on the page of a 3rd grade mathematics textbook is formulated as follows: "To multiply a sum by a number, you can multiply each term by this number and add the resulting results."

One difficult case of division within 100 is dividing a two-digit number by a two-digit number. When studying this topic, methodologists recommend working with children on a sufficient number of exercises on this type of calculation, and then more often including solving similar problems in lessons. The main technique for dividing by a two-digit number is to sequentially select the quotient and then check it by multiplying. Therefore, Utkina N.G. believes that exercises in testing division by multiplication and multiplication by division will serve as good preparation for considering the case of dividing a two-digit number by a two-digit number.Here are examples of such exercises at the preparatory stage of training before solving examples of a new type:

1. Perform multiplication (division) and check it by division (multiplication):

27 ■ 3 =... ; 81 : 3 =... etc.

2. Compose examples according to the model:

48 ■ 2 = 9619 ■ 324 ■ 4 96 : 2 = 48.........

When completing the task, students should provide comments on their solution, referring to knowledge that will help them justify the correctness of the numbers obtained in the answer to these examples.

The developmental education system assumes that students independently acquire knowledge and methods of action, transferring what they have learned to solve new educational and practical problems. Thus, in contrast to the traditional education system, the developmental education system of the authors L.V. Zankova, N.B. Istomina uses an indirect way of developing computational skills, which involves the inclusion of students in productive creative activities and is aimed at developing a

general way of action in younger schoolchildren and understanding its particular options. Of course, this path is longer, but as a result of this approach to the formation of computational skills, children acquire strong and conscious skills in solving examples of off-table multiplication and division.

Thus, in traditional mathematics teaching, the material is given in read-made form, i.e. Students are given a ready-made sample of actions, a ready-made algorithm for performing the operation being studied, which students reinforce during repeated training exercises. Reproductive activity predominates in mastering a skill. In the developmental education system, students are not given a ready-made model for performing an operation; they independently search for an algorithm for its implementation, engaging in productive, creative activity, which leads to the formation of conscious and strong computational skills.

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