PRACTICAL MATERIALS FOR TRAINING OPTIMIZATION STUDY PROBLEMS BY MATH

Nurmuhammadi Samira Tagy g.

Ganja State University doctoral student

Abstract

This article provides practical materials for optimizing the learning of learning problems in mathematics. To accomplish the beneficial assimilation of theoretical material by solving problems, the optimal environment for teaching and educational positions in the lesson must be determined. In order to teach students how to optimally organize the learning activity in solving a problem, it is necessary to develop an independent student's activity.

Keywords: theoretical materials, educational issues, solution of problems, formation, text

Introduction

After clarifying the responsibility of solving problems, we determine the study of the optimal contents of practical materials, as well as the level of complexity of the logical sequence, etc. For this, the separation of concepts, actions in the task is an important condition. If the above expressions are not taken into account, then most of the time will be spent on solving secondary problems. And this is the reason for the workload of the students.

To accomplish the beneficial assimilation of theoretical material by solving problems, the optimal environment for teaching and educational positions in the lesson must be determined. For this, there must be the ability to choose the most suitable lesson structure from the teacher and draw up an optimal lesson plan. To ensure the assimilation of theoretical material, the choice of the optimal method for solving the problem, means and form is important. At this time, everything depends on the time provided, on the responsibilities of the lesson, on the content, on the possibilities of the condition, and on the student's independent work. When solving a problem, along with teaching methods, it is also important to learn optimal relations between forms of learning, such as, in the form of a team or group, or independently. [1]

In the elementary class of mathematics, by solving a problem, the optimization of the study of theoretical materials is closely related to the optimal volume with difficulty, with the complexity or ease of doing homework, with the issuance of additional tasks.

In this matter, understanding the conditions of the task, the ability to perform, independence is of great importance for the students. Without optimizing the solutions in the elementary grades, it is not important to optimize the overall learning process.

In order to teach students how to optimally organize the learning activity in solving a problem, it is necessary to develop an independent student's activity.

1. Independent work with the book. (independent study of the material, highlighting the main idea, drawing up a short statement of the problem)
2. Ability to work with tempo, optimal math reading and math writing.
3. Ability to plan training activities (make a plan for the text, the answer to the problem)
4. Self-control and self-correction (the ability to check oneself and control).

The study of the performance of a particular case is not the main property in order to lead in this case. A student, according to his strength and capabilities, must learn to use different types of skills optimally and must be able to accept methods of memorization, develop memory. In this case, in a short time and without expenditure of effort, he can thoroughly learn something. Optimization of learning by solving problems requires treating the educational process and monitoring the lesson from a new position. First of all, the teacher must be able to analyze his work experience, objectively evaluate the activities of the organization of the optimal lesson. To do this, it is necessary to pay attention to the following requirements: to what extent has a comprehensive educational and developmental responsibilities and decisions been achieved, the extent to which the optimal choice of forms and method of the lesson and the content of the lesson were provided. Was the optimal amount of homework and its difficulties successful?

As you can see, solving the problem plays a major role in optimizing the teaching of theoretical material in mathematics and in the application of pedagogical work. Therefore, each teacher must gradually master not only the theory, but also the organization of the optimal teaching methodology.

Based on the above, let's look at the tasks related to the optimization of theoretical teaching materials for primary grades.

For the formation of mathematical ideas in the first class, the main place is occupied by the solutions of simple problems. The chosen mathematical method for solving the problem underlies its analysis conditions. In this case, natural numbers, calculation tasks form the first grader's idea of natural numbers, and addition and subtraction tasks make it possible to consciously and quickly complete tasks.

In this way, students learn and understand different use cases by solving simple problems. [2]

After that, students are introduced to word problems. Word problems in primary grades play an important role in optimizing the teaching of theoretical materials in mathematics. But unlike the senior grades, in the first grade, the content of word problems must be taken from life situations. In this case, when solving problems, primary school teachers are faced with some problems such as not distracting the attention of students, saving time, developing students' computational

skills, and teaching them mathematical concepts. To solve these problems, life situations, life examples play an important role.

For pupils of the first grade, the distribution of attention for the foundation of the material creates difficulties, that is, in any compiled problem, when a student encounters an unfamiliar word, instead of solving the problem, he begins to be interested in this word, he has a question what is it?

(big or small, bitter or sweet, red or green.)

Performing two or more mental activities creates difficulties for students. Therefore, each of the activities performed should be familiar to the student, one of the activities, to a certain extent, should become a habit. In other words, it is compiled on the basis of life examples, and is easily perceived by students.

Let's show this with examples. Task: In two shifts at one of the mines with the mechanized method, 475 tons of coal were mined. The shift rate of coal production for the working clean-up face in both shifts is 25 tons. The second shift produced 76 tons of coal more than the first. How many workers are there in each shift? Solution: If both shifts mined the same amount of coal as the first shift, then each shift would have mined (475-75): 2 = 200 (T) Then 200 worked in the first shift: 25 = 8 people In the second shift there were 8 + 75 : 25 = 8 + 3 = 11 people Answer: 8 workers; 11 workers (Gretsova RG Methodological recommendations for the compilation and solution of problems in mathematics with the content produced. Moona 1975. p. 31). From this problem, students learn what is known in this problem and what is not, what comes from the condition of the problem, what calculations are required, how to find the answer.

In the first grade, solving problems taken from life situations help students develop the skills of conscious and robust computation. Students have the opportunity to improve their conscious computing skills in order to solve this problem quickly and the teacher, given this, gives them the opportunity to solve many examples. Thus, the teacher of mathematics to optimize "time" must necessarily maintain the intensity and increased productivity.

In addition, in the first grade, especially for 6-year-olds, additional examples, manuals and didactic materials are given and this is considered appropriate. For a 6-year-old student, the expression “more”, “less”, “a lot” can be learned using the words “how” and “how much”. Here the main task of the teacher is a visual aid and this is the choice of an appropriate system of practical exercises. And this leads students to the necessary generalizations.

In the process of solving problems of teaching a student, the teacher teaches the main type of activity of individual components in the content of training. Thus, the process of teaching and learning, or the optimization of organizations, must figure on a scientific basis.

The solution of examples of the educational process, starting from the 2nd grade, (in the 1st grade, usually simple concepts are studied) of the scientific organization and optimization at the same time depends on the student's educational activity, the specific nature of the study of the subject, ... on the teacher's experience.

By solving problems, studying optimization of practical material in mathematics, requires the most beneficial relationship between teacher and student, either in the process of learning or teaching, this relationship between teacher and student guarantees the maximum success of the activity.

In the first, in the second class of problems on a rectangle, a square, the sum of the sides of a square serves as a good tool for optimizing theoretical materials in mathematics.

Task. The length of the drawing in a rectangular shape is 1 dm 2 cm, and the width is 7 cm. How many cm are the length and width of the rectangle together? 1dm 2cm = 12cm 12 + 7 = 19cm.

Thus, in these classes, quantities can be expressed with geometric materials. For example, let's use an addition problem. If a segment consists of two segments, then the length of the segment is equal to the sum of these two segments. So, in fact, this is the sum of two numbers.

This means that we come to the conclusion that the choice of appropriate visual aids helps to activate learning and assimilation of the topic. This shows that visual aids are essential to optimize early math learning.

From all of the above, we can conclude that in order to optimize theoretical materials in mathematics in the first grade, we can group the studied tasks as follows.

5. Examples of increasing and decreasing a number by several units.
6. Examples for finding the amount.
7. Examples of finding the remainder.

To master the process of solving such problems, students are advised to show a schematic implementation of actions.

In the third grade of a four-year school and in the second grade of a three-year school, the problems to be solved in mathematics, the following practical material for optimizing learning, first of all, plays an important role in creativity in teaching students.

- checking the validity of the sum (in fact, in the future this is a preparation for determining the action of subtraction and this sum shows the concept of the inverse problem).

- subtraction check (to clarify the concept of a diminished, subtracted, difference and with the help of these two express the third, more precisely, the compilation of a certain mathematical relationship)

- adding the amount by the amount (the law of grouping is explained to the students and the action is applied in the optimal way)

In addition to learning product and division, tasks expressed in a direct and inverse way, which relate to increasing and decreasing a member several times, also perform tasks related to comparison, and this leads to optimization of the learning of practical material - that is, to the assimilation of a new concept - helps to open the essence the concept of how many times the first term is greater or less than the other.

In addition, factors, product, law of permutation of factors, finding an unknown factor, finding an unknown divisor and dividend, product and ratio of sum per term, ratio of difference per term, comparison of terms, perimeter, checking the divisor through the product, finding part of a term and, solutions of prime and complex tasks related to the comparison of the parts of the penis play a major role for better assimilation of practical materials. For now, let's look at learning how to optimize practical material from mathematics using specific problems.

Task. The vessel contained 7 glasses of water. Subsequently, 2 glasses were poured. How many glasses of water are left?

When solving this problem, students see that to find the unknown term, it is enough to subtract another term from the sum. This means that with the help of solving such problems, students are presented with a mathematical (in the future, functional dependence) dependence between the reduced, subtracted and the difference, and there is an initial preparation for determining the action of subtraction in the future. [3]

In addition, such problems, which relate to finding an unknown term, also show themselves as an aid to the study and assimilation of the concept of an equation.

Tasks that include the concept of equations lead to a better assimilation of the concept of equations by students. In other words, if the students' initial preparation for equations is suitable for their age and knowledge, then in the future it will be easy for them to study materials on this topic.

Only in the methodological literature there are some ways of constructing equations according to the conditions of the problem. The reason is the complexity of the structure of the equation, and it is also impossible to give a formula and a general solution method.

In addition to all these, in the primary grades in the optimization of teaching mathematics, problems should be grouped so that problems in each group are solved on the basis of the same topics. Then the grouping of tasks leads to the same method of solving them.

Observations show that students have certain difficulties in equations, comparing numbers and finding a part of a number. Therefore, when studying such materials, they use visual geometric properties. For example, consider an example on equations and on learning how to find parts of numbers.

Cut a rectangle and fold it into parts equal to 2,4,8. How many parts in a rectangle are equal to one second, one fourth, one eighth. Which part is the largest?

½ or ¼, ¼ or 1 / 8,1 / 2 or 1/8

Students when solving such problems visually study part of the numbers and the comparison of numbers. In other words, in the future, students will begin to understand fractions, equations, and comparison of fractions. And also the basis of geometric solutions to such problems is provided for successful development in the upper classes.

In grades 4 (four-year school) and 3 grades (three-year school) of primary school, the solved examples cover the entire course of elementary mathematics, in these classes there are ample opportunities for optimizing the teaching of theoretical materials of mathematics. [2]

Conclusion

This process can be accomplished using the following types of tasks.

8. The number of actions in solving problems are simple and complex.

9. Difficult tasks are divided into two parts:

10. a) inverse problem b) direct problem

11. Word problems and their solutions are divided into two parts according to the availability of the algorithm. A specific algorithm for solving a problem is called a typical problem.

12. a) tasks solving by converting to units

13. b) the problem of finding the unknown quantity between two differences

14. c) tasks related to symmetric divisions

15. d) the problem of finding a given part of the number and by the number of parts of the number

16. e) tasks for actions, etc.

17. In mathematical science, inverse problems, it is believed that the solution of any problem is considered necessary to solve its inverse problem. Hence, in the teachings of word problems, the meaning of mutually inverse problems is determined.

Note that in the elementary grades, in the process of mathematical solutions, space should be given for a way of comparison. Because the optimization of mathematical knowledge, in these words, the concept between quantities is of great importance. [3]

The table and geometry of multiplication and division, as well as an element of theory and concepts, as well as inverse problems of geometric optimization, play an important role in its teaching.

References

1. Loshkareva N.A. On the concept and types of intersubject connections. Soviet pedagogy 1972 №6.
2. Fokii G.I. Interdisciplinary complex tasks as a means of developing students' independence and activity M. 1973.
3. Monakov V.M. On the question of the system analysis of interrelationships of natural mathematical disciplines. 1978