



PROBLEMS IN SOLVING SIMPLE PROBLEMS IN MATHEMATICS IN PRIMARY SCHOOLS

Zaxiya Akhmedovna Narimbetova

CSPU, Associate Professor of the Department of Mathematics and Natural Sciences in Primary Education

Phone: +998 99 867 29 10

Email: zakiyanarimbetova@gmail.com

Zilfira Dineeva

Chirchik State Pedagogical University,

1st Year Student of the Master's Program, Direction "Theory and Methodology of Primary Education"

Phone:: +998975177585

Email: zilfira0233@gmail.com

Abstract:

This article outlines the main methods for solving logical problems, the teaching methodology is studied, and some of the general issues of the methodology for teaching problem solving are analyzed.

Keywords: Method, order, logical problems, analysis, error, technique, logic, component, motivation, activity.

ПРОБЛЕМЫ ПРИ РЕШЕНИИ ПРОСТЫХ ЗАДАЧ ПО МАТЕМАТИКЕ В НАЧАЛЬНЫХ КЛАССАХ

Наримбетова Захия Ахмедовна

ЧДПУ, доцент кафедры Математика и естественные науки

в начальном образовании

Phone: +998 99 867 29 10

Email: zakiyanarimbetova@gmail.com



Динеева Зильфира

Чирчикский государственный педагогический университет,
студентка 1-курса магистратуры, направления «Теория и методика
начального образования»

Phone:: +998975177585

Email: zilfira0233@gmail.com

Аннотация

В данной статье изложены основные методы решения логических задач, изучена методика преподавания, проанализирована часть из общих вопросов методики обучения решению задач в начальных классах.

Ключевые слова: Метод, порядок, логические задачи, анализ, ошибка, приём, логика, компонент, мотивация, деятельность.

Introduction

Within the framework of the State Program for the Development of the New Uzbekistan for 2022-2026 ("Year of Ensuring Human Interests and Mahalla Development"), it is planned to improve the quality of school education by raising the qualifications of teachers, modernizing textbooks and school infrastructure in accordance with international standards. The goal is to educate students in the spirit of devotion to national and universal values and to increase the prestige of the teaching profession.¹

In elementary school, despite the apparent simplicity of the problems, students often face difficulties in solving them. This work is devoted to the analysis of typical problems that younger students encounter when solving simple mathematical problems.

Solving mathematical problems contributes to intellectual development and the formation of effective methods of teaching mathematics. (Karasel, Ayda, & Tezer, 2010). Solving mathematical problems is a complex and exciting area that presents a challenge for both beginners and experienced mathematicians, regardless of their level of knowledge. (Goldin, 1997). In addition, problem solving is the application

¹ Указ Президента Республики Узбекистан, от 11.05.2022 г. № УП-134



of available data in non-standard, previously unknown conditions. (Nik Pa, 2008). The analysis uses the definitions of mathematical processes, models, and problem solving strategies as a basis. (Law O.S., 2019).

1. Basic methods for solving logical problems

The method of sequential reasoning - the easiest way to solve simple problems is sequential reasoning using all known conditions. Conclusions from the statements that are the conditions of the problem gradually lead to the answer to the question posed. Problems on pouring and weighing.

A type of the reasoning method is "from the end". This method of solving is a type of the reasoning method and is excellent for problems in which we know the result of performing certain actions, and the question is to restore the original picture.

M3.ЧД.29 Knows the order of operations. Distinguishes the order of operations with and without brackets.

Numbers from 1 to 9 are given. Abdullah was given the numbers 7, 2 and 4; Munise 6, 5 and 1; Firdavs 8, 3 and 9. Children can use 4 arithmetic operations (addition, subtraction, multiplication, division) and each number only once. -Who won't get 20?

The method of reasoning "from the end". Specifically for this task, it would be good to apply the method "role play", each of the students takes on the role of the main characters of the task and receives the cherished numbers. The numbers are written on the board and the participants are told the result, with only one proviso that someone will get "inequality".

Numbers: 7,2,4 $(7-2)* 4=20$

Numbers: 6, 5,1 $\neq 20$

Numbers: 8,3,9 $8+ 3+ 9=20$

Table method. The main technique used to solve text logic problems is to construct tables. Tables not only allow you to clearly present the conditions of the problem or its answer, but also significantly help to make correct logical conclusions when solving the problem. The table method helps children with weak abstract thinking. To teach children to solve logical problems, they must be armed with different methods of solving.

M3.ES.1 Collects, expresses and analyzes information about real situations (data series, diagrams (lines, columns), tables).



Girls	Date of birth
Yasmina	20
Sevara	March 20
Hilola	
Comila	March 1

Yasmina, Sevara, Komila and Khilola have birthdays on March 1, May 17, July 20 and March 20. Komila and Sevara were born in the same month. Yasmina and Sevara have the same birthday number, but a different month. Whose birthday is May 17? The first column is the girls' names, the second column is their birth dates. If Komila and Sevara were born in the same month, then we write only "March" opposite, without putting the date. If Yasmina and Sevara have the same date, but a different month, we put the same numbers opposite, and such numbers are in July and March, so we get that Sevara was born on March 20, which means Komila was born on March 1. Filling out the table

it is easy to see the missing data and all that remains is to write them in.

2. Analysis of errors that occur when solving arithmetic problems

Diagnosing common errors when solving problems will help you choose the right way to eliminate them. Mistakes often occur at the initial stage:

Mistake 1. The problem statement at stage 1 is written incorrectly.

Most students are not taught to write the statement correctly, that is, to single out the main thing; the prerequisite for this is a quick, thoughtless reading of the problem, without its detailed analysis. For example, a problem for grade 1.

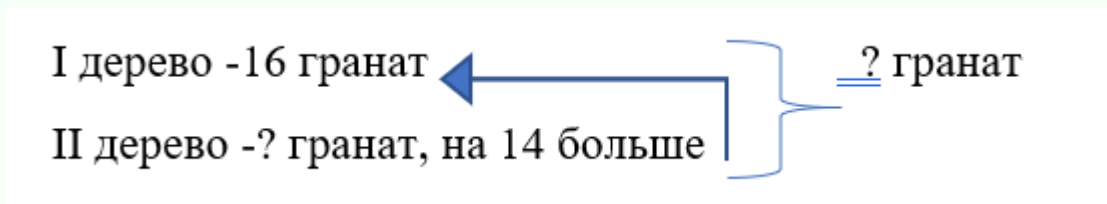
16 pomegranates were picked from one tree, and 14 more from another. How many pomegranates were picked from both trees?

Most children begin to write "picked" and this is where the confusion begins.

Technique 1. I think that when reading a problem, children should read the statement before the punctuation mark and write down the data and the required ones on a draft.

"16 pomegranates were picked from one tree." What did you learn? From one tree, so there are other trees, right? Write down in the draft: Tree 1 - 16 pomegranates. We read on, "and from another 14 more," so another tree appeared, which one in number? - Tree 2, and how many pomegranates were picked from it is known? No. What does 14 more mean? It means the same as on tree 1 and add 14. How do we

indicate this in the condition? Let's draw a bracket. Read the question to the problem: "How many pomegranates were picked from both trees?" From both trees, then? Total. How do we reflect this in the condition? Write "total" or a summary bracket.



Technique 2. When reading the problem, cross out the extra words with a pencil. 16 pomegranates were picked from one tree, and 14 more from another. How many pomegranates were picked from both trees?

When the students solved the first simple problems, there were standard verbs: "was", "flew away", "remained", etc., but as the problems become more complex without a good enough analysis of the problem, the children will remain at the initial level. And a correctly composed condition is 70% of the solution.

Mistake 2. Skipping the search for a solution at stage II.

Probably, I am not the only one who noticed that the teacher calls students who are good at solving problems to the board to solve the problem. But this is a mistake! Those who solve problems without problems can solve them in their notebooks for now and show their solution to the teacher. Most copywriters will never learn to solve problems if the teacher does not work with them at the board. In continuation of the solution of the problem, the condition is made, in our problem there is the main question "How many pomegranates were plucked from both trees?" will we be able to answer this question right away? No. To answer this question, what should we do? Add the pomegranates from the first tree to the pomegranates from the second tree. On the first tree the number of pomegranates is known - 16, on the second - not, to find out the number of pomegranates on the second tree you need to add another 14 to the number of pomegranates on the first tree, because "more". Speak, pronounce and practice!

Error 3. Incorrect order of solution at stage III.

Here, children do it simply - they solve it in one action, despite the fact that there are two questions in the problem. The main thing is that there is an action:



1) $16 + 14 = 30$ (pomegranate) II der. And now, can we find out the number of pomegranates

on both trees? Now yes. What do we need for this? Add.

2) $16 + 30 = 46$ (pomegranate) in total.

If students themselves verbally pronounce all the stages of the solution, then they will definitely learn to solve problems.

Another difficulty is composing an expression according to the problem or already according to the actions. All this happens because children have not fully mastered the components of addition, subtraction, etc. And if you explain it to children like this, our task is to find the sum. And in the sum there is 1 addend and 2 addends. 1 term we know is 16, and the second term is presented to us as a sum ($16 + 14$), now we can easily write the expression: $16 + (16 + 14) = 46$

The same thing happens when composing an equation, so I repeat, knowledge of mathematical components is the key to a successful solution.

Error 4. Checking the solution at stage IV.

Here, you need to check the correctness of the solution to the problem. This includes:

- composing and solving the inverse problem. Children need to explain that the inverse problem is magic. Namely, what was the question in the problem is now known to us, and what was known now-? which we have to answer. After solving, compare the resulting number with the number that was chosen as the unknown. Of course, this method is difficult for children and is performed mainly when solving simple problems.

There were 24 black and 36 white rabbits on the farm. They bought 38 more gray rabbits. How many rabbits are there now?

1) $24 + 36 = 60$ (rabbits) black and white

2) $60 + 38 = 98$ (rabbits) became

Inverse problem: In the first problem we had to find the sum of all rabbits, and in order to check the same problem, our sum turns into a difference. It follows that there is a direct relationship between the components. 1) $98 - 24 = 74$ (rabbits); 2) $74 - 36 = 38$ (rabbits) gray

- solving the problem in a different way. Here, students are asked to check the solution to the problem by solving it in a different way, namely: the order of actions, solving using an expression or equation.

For example, in our problem there were 2 actions, and if the number of black and white rabbits is written as the sum of two terms, and then added to the number of gray rabbits, we get the expression: $(24 + 36) + 38 = 98$ (rabbits)

What is interesting is that in the class, students who have no problems in mathematics sit and write everything down by actions, although they can compose and write an expression themselves.

- composing and solving inverse actions. Such a check is a self-check, especially for those students who make frequent mistakes in arithmetic calculations. The check can be done on a draft.

1) $24 + 36 = 60$ Check $60 - 36 = 24$

2) $60 + 38 = 98$ Check $98 - 38 = 60$

We have analyzed the most important errors in solving problems, but there are still errors that are either systemic or episodic.

Such errors include:

- forgot to draw a bracket, mixed up the brackets "sum", "for comparison" or "more by, less by" sometimes has a systemic nature;
- an error in calculating the actions of the problem. The problem is composed correctly, but due to carelessness it occurs, is episodic;
- an error in formulas: confusion in finding the perimeter and area of a figure;
- when solving geometric problems: no drawing, but there is a solution or vice versa.

During a math lesson in the 1st grade, the following problem was given: Draw three segments. One segment is 8 cm long, the second segment is 3 cm longer than the first, and the third segment is 5 cm shorter than the second.

And then the children made the following mistakes:

- they drew 3 segments with these data without calculating;
- they drew correctly, but without a solution;
- they wrote the condition correctly, but got confused when solving "longer", "shorter";
- they did not have time to draw the segments;
- they did not solve this problem at all.

As a result, only 13% of children solved this problem without errors.



In general, to prevent errors in problems of this type, it would be good to conduct preliminary work to consolidate the skill of solving, and then a preliminary control to find out where children have particular difficulties.

I am of the opinion that after conducting a test, conducting a lesson on "working on mistakes" is a useless activity, at least for children for sure. As doctors say: "We need to do prevention, then we will not have to treat the disease."

After conducting a test with an unsatisfactory outcome, only the teacher collects information about the most common errors and gradually introduces similar types of problems in the lessons.

The world of mathematics is not only dry numbers, to love mathematics you need to know its philosophy from the inside. You need to pass through yourself the connections that are determined by practical and research.

I never cease to assert that a mathematical problem is a means of education, a means of understanding the world of a primary school student, it carries information about the country, forms his worldview, helps him socialize, develops his ideas about the modern world.

A caring teacher should never stand aside, he should fight for each student. We must not only teach him to calculate according to the school curriculum, we must put into the heads of our students as much as possible, knowledge about the history of our country, knowledge about great mathematicians, discoveries, commanders, innovations occurring in our country. And let some of our students not become an excellent student in mathematics, but through such problems he will definitely become a real person.

REFERENCES:

1. Указ президента Республики Узбекистан от 11.05.2022 № УП-134 Об утверждении Национальной программы по развитию школьного образования в 2022 — 2026 годах.
2. Постановление Президента Республики Узбекистан, от 07.05.2020 г.
3. № ПП-4708. «О мерах по повышению качества образования и развитию научных исследований в области математики».
4. Указ Президента Республики Узбекистан, от 05.09.2018 г. № УП-5538 "О дополнительных мерах по совершенствованию системы управления народным образованием".



5. Репьёва И. В., Землина Ю.В. Математика, 1 класс в 4-х частях.- Ташкент: издательство «Novda Edutainment», 2023.
6. Репьёва И.В., Математика, 2 класс в 4-х частях.-Ташкент: издательство «Novda Edutainment», 2023.
7. Репьёва И.В., Математика, 3 класс в 4-х частях.-Ташкент: издательство «Novda Edutainment», 2023.
8. Репьёва И.В., Ю. В.Землина. Математика, 4 класс в 4-х частях.- Ташкент: издательство «Novda Edutainment», 2023.
9. Наримбетова З.А., Сытина Н.В. Учитель -нравственный пример для ученика- издательство: «ACADEMIC RESEARCH IN EDUCATIONAL SCIENCES VOLUME» 2 | ISSUE 1 | 2021
10. Zakhiya Akhmedovna Narimbetova. The study of the elements of fractal geometry as a means of integrating knowledge in mathematics and computer science in the educational process of a secondary school students/ International Journal Of Scientific & Technology Research Volume 9, Issue 04, April 2020
11. Tursunov I. G. Narimbetova Z. A. Развитие геометрических компетенций учащихся в общеобразовательных школах/ Pedagogical Cluster- Journal of Pedagogical Developments. 2023, 1/1.