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SOI: [1.1/TAS](#) DOI: [10.15863/TAS](#)

International Scientific Journal Theoretical & Applied Science

p-ISSN: 2308-4944 (print) e-ISSN: 2409-0085 (online)

Year: 2019 Issue: 02 Volume: 70

Published: 18.02.2019 <http://T-Science.org>

QR – Issue



QR – Article



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**SECTION 21. Pedagogy. Psychology. Innovations
in the field of education.**

THE ROLE OF LOGICAL TASKS IN TEACHING PRIMARY SCHOOLCHILDREN IN MATHEMATICS

Abstract: In this article has been analyzed the role of logical tasks in teaching primary schoolchildren in mathematics by the helping literatures.

Key words: education, pupil, school, process, knowledge, math, ability.

Language: English

Citation: Mamadjanova, M. K. (2019). The role of logical tasks in teaching primary schoolchildren in mathematics. *ISJ Theoretical & Applied Science*, 02 (70), 89-91.

Soi: <http://s-o-i.org/1.1/TAS-02-70-10> **Doi:**  <https://dx.doi.org/10.15863/TAS.2019.02.70.10>

Introduction.

The state educational standard of the Republic of Uzbekistan of the second generation [1], realizing new requirements for the level of preparation of younger schoolchildren and determining ways to improve the mathematical training of primary school students, focuses on the need to form such a key factor in their skills as the ability and desire to learn. Raising interest in mathematics among younger students, the development of their mathematical abilities to a greater extent depends on the implementation in the educational process of various types of tasks that require students to know different sections of the initial course of mathematics, the ability to build reasoning, draw conclusions, justifying their judgments and, ultimately as a result, independently acquiring knowledge and solving problems that occur, teaches children to critical understanding of the results obtained.

Research methods:

The implementation of this provision is reflected in the curriculum of the primary school mathematics, where, along with the traditional textual tasks, the problems of combinatorial and logical nature are included for the first time, and the qualification requirements for primary school graduates indicate the need to form the following competencies:

At the initial stage of studying mathematics (AI):

- be able to solve simple practical, textual and logical problems;

- be able to organize objects by properties and build simple combinations;

At the strengthened initial stage of learning mathematics (AI +).

- in simple practical situations, be able to solve combinatorial and logical problems [1, p. 36].

The introduction of logical tasks into the course of mathematics of primary classes is explained by the fact that, on the one hand, their solution allows students to develop such methods of mental activity as analysis, synthesis, analogy, generalization, abstraction, specification, i.e. has a positive effect on mental development of students, is an effective means of developing thinking; on the other hand, when solving them, there is no need for calculations or calculations play an auxiliary role.

The variety of logical problems is almost unlimited, in addition, there are different approaches even to the definition of this concept.

V.P. Zaisenok the one formulated the following definition of a logical problem: "Logical problems are those problems whose solution involves various operations with statements" [2]. In accordance with a similar approach, it is obvious that, for example, problems for which the Euler circles are used are not logical, but arithmetic.

L.P. Stoylova notes that when solving logic tasks "... the search for an answer to a question is carried out on the basis of reasoning. Calculations in solving

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them play a supporting role, and sometimes they are not needed at all”[6, p.104].

E. S. Kanin, defining the concept of “logical task”, refers to such tasks that, at first glance, are not mathematical, but at the same time require for their decision the formulation of judgments (statements), the construction of conclusions and their chains [4].

L.P. Terentyeva defines logical problems as problems whose solution for a given student is not a known chain of known actions, these are problems that are solved using only logical operations [7].

L.M. Likhtarnikov identifies the following important features of logical problems: “... logical problems differ from most mathematical ones in that they usually do not require a large amount of mathematical knowledge and can be limited only to some information from arithmetic” [5, p.3-4] .

Of all the variety of logical problems, depending on their content, form, level of complexity, and the possibility for pupils of primary classes to find an acceptable solution, we consider it expedient to include the following types of logical problems in the initial course of mathematics, the solution of which comes down to the use of certain techniques.

1. Tasks on the search for patterns and classification. Lacking mathematical generality, tasks of this type are designed to facilitate students' search for rules, patterns, ways of writing, building specified or created constructions, sequences of numbers, etc., i.e. they are designed to develop students' observation, intuition, ingenuity, the need to see the whole meaning of the exercises, to see patterns; these tasks are not immediately given to students and not to everyone with the same success. They contribute to the development of hard work, perseverance in achieving a specific goal [9].

2. Tasks on the ordering of elements of sets. The basis of solving problems of this type is the notion of an order relation on a set: the relation R on the set X is called an order relation if it simultaneously possesses the properties of asymmetry and transitivity. If an order relation is defined on the set X, then they say that X is ordered using this relation [10].

3. Tasks to establish a one-to-one correspondence between sets. A one-to-one correspondence between sets X and Y refers to a correspondence where each element of set X is associated with a single element of set Y and each element of set Y corresponds only to one element of set X.

4. Crossing tasks. This type of task involves the situation of crossing the river from one bank to another. Moreover, the difficulties of crossing are usually associated with a lack of swimming facilities, the number and characteristics of passengers, as well as the carrying capacity of swimming facilities.

5. Tasks for transfusion. Tasks for transfusion are tasks in which with the help of two or more empty vessels of known containers it is required to measure a certain amount of liquid. In this case, two operations are allowed: empty one vessel and fill to the brim of the other.

6. Tasks for weighing. Weighing tasks are tasks in which it is necessary to establish a particular fact (select a false coin among the real ones, sort a set of loads by weight, etc.) by weighing on lever scales without a dial. The formulation of the problem is often used, requiring either to determine the minimum number of weighing necessary to establish a certain fact, or to give an algorithm for determining this fact for a certain number of weighing.

7. Tasks for evidence based on worst case consideration. This is a technique for solving a problem where, in order to prove a statement, we can consider the worst case in which the statement is executed. If it is possible to prove the validity of the statement for the worst case, then it will be even more true in the remaining cases.

8. Tasks for evidence based on the Dirichlet principle. The Dirichlet principle is a logical device used in the indirect proof of the existence of an object with given properties. Its essence is as follows: if you decompose objects in n boxes, the number of which is greater than n, then there is a box with more than one object

In many logical problems, the main goal of the solution is to develop a plan, method of action or a solution algorithm, therefore, at the search stage, it is necessary to develop causal relationships, build logical chains of reasoning, choose more efficient ways to solve the problem depending on specific conditions, and be able to put and formulate the problem and independently create an activity algorithm.

Analyzing situations that are described in logical problems, students acquire new skills: they gain experience in searching and highlighting the necessary information, master the skill of semantic reading and analysis of essential and non-essential features of objects. It is in solving a logical problem that a child can demonstrate his abilities and amaze with the ingenuity and peculiarity of logical thinking (flexibility and criticality of mind) [3].

During the search for a solution to the problem, students form the following learning skills:

- Ability to formulate and formulate problems;
- The ability to identify cause-effect relationships;
- Skills to choose an effective, in each specific task, solution method;
- The ability to build a logical chain of reasoning;
- The ability to create an algorithm activity in solving the problem.

The ability to independently create an algorithm is especially important, since in solving logical problems the main goal is to develop a plan or

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method of activity. This is especially important since, by solving logical problems, elements of the information culture are formed on the initial course. They include various ways of processing information, visual forms of its presentation - tables, charts, graphs, and many others, and this is important for the inclusion of information in the course of mathematics in elementary school.

Along with the training and educational functions, the leading functions of logical tasks are the developmental function aimed at developing students' logical thinking, mastering effective mental activity by them, the ability to analyze, synthesize, compare, classify, perform tasks by analogy, generalize.

Since in most cases the solution of logical problems is not immediately, but only after a series of attempts, this produces perseverance in achieving the goal, i.e. contributes to the formation of volitional

qualities of the individual. And, finally, perhaps the most important thing: solving such problems gives the child a powerful emotional charge, connected both with the achievement of the result and with the awareness of the effectiveness and unusualness of the course of the decision.

Conclusion

In conclusion, logical tasks have enormous potential, since they contribute to criticality, they teach people to analyze and diversify the perceived information, and also increase interest in doing math. The information from which it is necessary to draw conclusions is given in text. The solution of such problems teaches to reason, not to retreat before difficulties, instills confidence in the successful solution of tasks.

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