FEATURES OF LOGICAL THINKING

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Annotation

The article discusses the features of logical thinking in younger students. The types of logical tasks and certain methods of their solution are explained.

Keywords: thinking, logical tasks, sensitive period, development of analysis and synthesis.

The thinking of children of primary school age differs significantly from the thinking of preschoolers. The thinking of preschoolers is characterized by such qualities as involuntary and low controllability both when setting a mental task and when solving it. Learning at school teaches younger students to control their thinking, to think when necessary, and not just when it is interesting, when they like what they should be thinking about.

As children go to school, their thinking becomes more arbitrary, programmed, conscious, planned. At primary school age, the third type of thinking begins to develop intensively: verbal, logical, abstract thinking. L.S. Vygotsky called primary school age a sensitive period for the development of conceptual thinking. School education, according to Vygotsky, puts thinking at the center of the child's conscious activity.

Students in grades 1-2 are often very one-sided in their judgment of objects and situations and grasp at an external sign. The results are based on visual assumptions given by perception. The substantiation of the conclusion is carried out not on the basis of logical arguments, but by direct correlation of the judgment with the perceived information. Generalizations performed by children at this stage occur under strong "pressure" of the characteristics of objects (such characteristics include utilitarian and functional characteristics). Most of the generalizations that occur at this stage fix the concretely perceived characteristics and properties that lie on the surface of objects and phenomena. As a result of systematic educational activities, the way of thinking of younger students changes in the 3rd grade.

Compared with preschoolers, the content of thinking in younger schoolchildren changes in connection with the formation of analysis. Children at this age begin to

realize meaningful relationships and relationships when they operate not only with real things, but also with their own images. Through reflection, students master verbal and logical thinking, relying on the internal foundations of their actions, they can act together when solving externally different tasks. The development of analysis proceeds from the practical to the sensual and further to the mental. Practically effective and sensual analysis prevails among younger schoolchildren.

The development of analysis occurs simultaneously with the development of synthesis: from simple, summing up, to a broader and more complex analysis and synthesis are closely interconnected, they are carried out in unity. The analytical activity of junior schoolchildren develops from the analysis of a separate subject, phenomenon to the analysis of connections and relationships between objects and phenomena.

So, if we talk about the peculiarities of thinking of a younger student and rely on all of the above, we can draw the following conclusions:

1. Features of the logical thinking of younger students are manifested both in the course of the thought process itself and in each of its individual operations (comparison, classification, generalization, which are carried out in various forms of judgment and inference).

2. The thinking of younger students is characterized by a one-line comparison (they either note only one difference, or only similar and common).

3. Logical judgments, work with concepts, transitions to generalizations and conclusions are available to children aged 7-10 years.

According to G. I. Vergeles , the formation of logical thinking methods in younger students is one of the main tasks of teaching in the first year of mathematics. Numerous observations of teachers such as Zak A.Z. have shown that a child who has not learned to learn, who has not mastered the methods of voluntary mental activity in primary school, as a rule, goes into the category of unsuccessful in secondary school.

In addition, the federal state educational standard of the second generation requires children to master the logical acts of comparison, analysis, generalization, classification according to generic characteristics, establishing analogies of cause-and-effect relationships, and constructing arguments.

Upon completion of elementary school, students should master the basics of logical and algorithmic thinking. Logical thinking develops on the material of all primary school subjects. But traditionally in mathematics lessons, special attention is paid to the development of logical thinking. There are various means of developing logical thinking: construction, mathematical games, entertaining exercises, etc. A special place in this series is occupied by logical problems.

Logical tasks in the first lesson of mathematics.

Human thinking is basically about posing and solving problems. The distribution of logical tasks is to a certain extent conditional. It is difficult to determine what task should be called logical. Problems of logical content, the solution of which is based not on calculations, but on reasoning, require the construction of a chain of exact logical reasoning with correct intermediate and final conclusions.

"To solve a problem, you don't need to guess. Think, think, operate with knowledge in accordance with logical rules suitable for identifying relationships between all subjects." Logical tasks differ from ordinary tasks in that they do not require calculations, but are solved using reasoning. Many methodologists, scientists and teachers were engaged in solving logical problems. You can name such names: A.Z. Zack , V.P. Trudnev , L. M. Likhtarnikov , S. Ya. Afonkin and many others.

Defining the concept of "logical tasks", V.P. Trudnev argues that logical exercises do not require complex calculations, and sometimes even calculations, but any exercise makes comparisons, draw conclusions, makes you think correctly, that is, think clearly sequentially. Highlighting the types of logical tasks, he relies on the operations that must be performed to solve the problem.

V. P. Trudnev considers the following types of logical problems:

- Set a match.
- Put the set in place.
- Number puzzles
- Where really?

A. Z. Zak believes that logical thinking is thinking according to the rules. It identifies the following types of logical tasks:

- Relationship between subject and attribute.
- A game of judgment that speaks of change.
- Playing with a judgment that speaks of kinship.
- A judgment game in which objects are compared by age.
- Comparison: "and", "or".
- Comparison of sets "As many as possible...".
- Judgments that are mutually exclusive.

L. M. Likhtarnikov gives the following description of the logical problem:
- the solution of a logical problem does not require great mathematical knowledge, and you can limit yourself to only some information from arithmetic;
- logical tasks are fascinating. Your decision develops logical thinking.

Likhtarnikov L.M. identified the types of logical problems in accordance with the method of solution, that is, the solution of problems is reduced to the use of certain techniques.

1. Problems related to intersections.

2. Find it out and count:

3. Wizard's magic mirror.

4. Where really?

5. Establish a correspondence between elements of different quantities - solve the problem.

6. Organize a set - solve the problem.

7. Is it possible to defeat the enemy? And if it is possible, how to do it?

8. Determine the winner of the tournament.

9. Number puzzles.

The main criterion for systematization is the methodology used in the solution.

In addition to the presented tools, you can suggest a systematization for solving the problem, in particular, you can define graphical tools for solving such problems:

1. tasks solved with the help of tables;

2. it is solved with the help of diagrams;

3. solved with drawings;

4. solved by drawing.

Literature

1. Adkhamjonovna, K. M. (2022). DEVELOPMENT OF LOGICAL THINKING OF JUNIOR SCHOOL CHILDREN. Web of Scientist: International Scientific Research Journal, 3(10), 914-919.

2. Adkhamjonovna, K. M., & Sarvinoz, K. (2022). WAYS OF DEVELOPMENT OF CREATIVE THINKING OF JUNIOR SCHOOLCHILDREN. Emergent: Journal of Educational Discoveries and Lifelong Learning (EJEDL), 3(10), 104-107.

3. Adxamjonovna, Q. M. (2021). BO'LAJAK BOSHLANG'ICH TA'LIM O'QITUVCHILARINING IJODIY YONDASHUV ASOSIDA KASBIY KOMPETENTLIGINI RIVOJLANTIRISH YO'LLARI. НамДУ илмий ахборотномаси-Научный вестник НамГУ, 507-510.

4. Akmaljonovna, A. Z. (2022). The Role of the Internet and Modern Electronic Dictionaries in Increasing the Lexicographic Competence of Primary School Students. International Journal of Culture and Modernity, 17, 1-6.

5. Gazieva, D. (2019). MEDIATEXT IN THE FUNCTIONAL-PRAGMATIC ASPECT. Scientific Bulletin of Namangan State University, 1(9), 153-158.

6. Gaziyeva, D. (2020). FORMS AND FUNCTIONS OF INTERTEXTUAL CHARACTERS IN THE MEDIA TEXT. Theoretical & Applied Science, (2), 671-673.

7. Gaziyeva, D. M., & Kushmatova, M. (2021). MAIN SUBJECTS OF MEDIACOMMUNICATION. Theoretical & Applied Science, (4), 418-421.

8. Khallokova M. E. Criteria for non-educational institutions to improve the quality of education //World Bulletin of Social Sciences. – 2021. – T. 5. – C. 52-55.

9. Khallokova M. E. Important Aspects of Establishing Non-State Educational Institutions //Eastern European Scientific Journal. – 2018. – №. 2.

10. Kuchkarova, M. A. THE IMPORTANCE OF LOGICAL PROBLEMS IN DEVELOPING CRITICAL THINKING OF CHILDREN. Zbiór artykułów naukowych recenzowanych., 171.

11. Mukhamedkadirovna, G. D. (2022). MEDIA PEDAGOGY AS A SPECIAL DIRECTION IN PEDAGOGICAL SCIENCE. Web of Scientist: International Scientific Research Journal, 3(10), 900-906.

12. Mukhtoraliyevna, Z. S. (2021). The Use Of Vocabulary Words In The Dictionary Given In The Textbook Of The 1st Class Native Language And Reading Literacy. International Journal Of Culture And Modernity, 10, 39-42.

13. Mukhtoraliyevna, Z. S. (2022). Develop Students' Speech by Working on Synonyms and Antonyms in Grades 3-4 in their Native Language Classes. European Multidisciplinary Journal of Modern Science, 6, 125-130.

14. Mukhtoraliyevna, Z. S. (2022). DIFFERENCES IN FREQUENCY OF USE OF CONGRUENT WORDS. Conferencea, 43-45.

15. Mukhtoraliyevna, Z. S. (2022). GENRE MODEL OF THE CROSSWORD PUZZLE AS AN ENIGMATIC DISCOURSE. Emergent: Journal of Educational Discoveries and Lifelong Learning (EJEDL), 3(10), 98-103.

16. Muxtoraliyevna, Z. S. (2022). ENANTIOSEMANTIK KONGRUENTLIK. BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI, 2(11), 105-109.

17. Pulatovna, N. G. (2022). Psychological Bases of Teaching a Foreign Language Injunior School Age. International Journal of Innovative Analyses and Emerging Technology, 2(4), 34-38.

18. Pulatovna, N. G., & Pavlovna, D. E. (2022). THE ROLE OF VISUAL TEACHING AIDS IN THE FORMATION OF EDUCATIONAL ACTIVITIES OF YOUNGER

STUDENTS. European International Journal of Multidisciplinary Research and Management Studies, 2(11), 116-121.

19. Qizi, B. M. U. (2022). Formation of Lexicographic Competence of Junior Students. European Multidisciplinary Journal of Modern Science, 6, 138-143.

20. Qizi, S. M. S., & Qizi, B. M. U. (2021). Dictionary in teaching vocabulary composition of language to junior school age students ways to work. ACADEMICIA: An International Multidisciplinary Research Journal, 11(10), 1869-1872.

21. Qo'chqarova, M. A. (2021). SOLVING TEXT PROBLEMS IN SIMPLE AND CONVENIENT WAYS. Theoretical & Applied Science, (4), 234-236.

22. Zokirova, S. M., & Axmedova, D. O. (2021). WORKING WITH BORROWINGS GIVEN IN DICTIONARIES OF PRIMARY SCHOOL TEXTBOOKS. Theoretical & Applied Science, (3), 275-278.

23. Абобакирова, О. Н. (2020). Жанровые особенности узбекских детских рассказов (на примере творчества Латифа Махмудова). Проблемы современной науки и образования, (1 (146)), 95-98.

24. Абобакирова, О. Н. (2020). ЎЗБЕК БОЛАЛАР ҲИКОЯЧИЛИГИНИНГ УСЛУБИЙ-КОМПОЗИЦИОН ХУСУСИЯТЛАРИ. МЕЖДУНАРОДНЫЙ ЖУРНАЛ ИСКУССТВО СЛОВА, 3(2).

25. Абобакирова, О. Н. (2022). АНВАР ОБИДЖОН ҲИКОЯЛАРИДАГИ БАДИИЙ ХУСУСИЯТЛАР (“ОДОБЛИ БЎЛИШ ОСОНМИ?” ҲИКОЯСИ МИСОЛИДА). Scientific progress, 3(4), 525-529.

26. Газиева, Д. М. (2019). Интертекстуальность как обязательная категория медиатекста. Вестник науки и образования, (20-3 (74)), 17-19.

27. Йўлдашева, Д., & Буважонова, М. (2019). БОШЛАНҒИЧ ТАЪЛИМДА ПРАГМАТИК ЁНДАШУВ АСОСИДА МАТН ЎҚИШНИНГ ЎЗИГА ХОС ХУСУСИЯТЛАРИ. Scientific Bulletin of Namangan State University, 1(12), 338-340.

28. Наркабилова, Г. П. (2015). Роль школьных мероприятий в развитии учащихся в инклюзивных школах. Актуальные проблемы современной науки, (2), 53-56.

29. Халлокова М. Нодавлат таълим муассасаларида таълим тизимини модернизациялаш //Общество и инновации. – 2022. – Т. 3. – №. 1. – С. 151-157.