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DEVELOPMENT OF LOGICAL THINKING IN THE PRIMARY CLASSES

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Abstract:

This article is devoted to the study and development of logical thinking in primary school children. Logical thinking is an important cognitive process that contributes to the development of analytical and problem-oriented skills in children. The purpose of the study is to identify effective methods and approaches to the development of logical thinking in children of primary age.

Keywords: logic, thinking, logical tasks, intellectual games, logical tasks, puzzles, development services.

Logic is a science that studies the laws of human thinking, the forms in which thoughts and various mental operations exist and are expressed. Logic is considered an abstract science, because studying the laws and forms of thinking, she is distracted from the specific content of thoughts, identifying the form in which it exists. Science studies the connection of thoughts, a common characteristic of any thoughts, regardless of their content. Therefore, when studying logic, you need to abstract from the content and identify the form of thoughts, which is indicated by logical symbolism. Mastering symbolism is important for analyzing reasoning and helps distinguish correct reasoning from incorrect reasoning.

Thinking is a process of actively reflecting reality. It is inextricably linked with language. It is capable of generalizing many homogeneous objects, highlighting the most important properties, and revealing significant connections. With the help of thinking, a person learns such phenomena as the movement of elementary particles, the laws of nature and society[6].

Ways to develop logical thinking: Logical thinking is not an innate talent; it must be developed. There are many ways to do this with pleasure. Let's list just a few of them:

- **Logic problems.** Many logic problems were invented thousands of years ago, but are still relevant today. They are often phrased in a funny way, making it fun and exciting to find witty responses to them.
- **Mind games.** Play for children is a way of understanding the world. By playing dominoes, checkers, chess, dots, scrabble and even just words with your child, you not only have fun, but also develop the child's thinking[7].
- **Puzzles.** Specialized stores offer an assortment of "brain games" for every taste and age - all kinds of labyrinths, puzzles, Rubik's cubes and entire scientific research kits. In many cities there are clubs for puzzle lovers, where children learn to solve puzzles and compete in the art of solving them.
- **Developmental services** . There are special platforms on the Internet that contain various tasks for the development of logic in children. The process of solving them resembles a game with different levels of difficulty.

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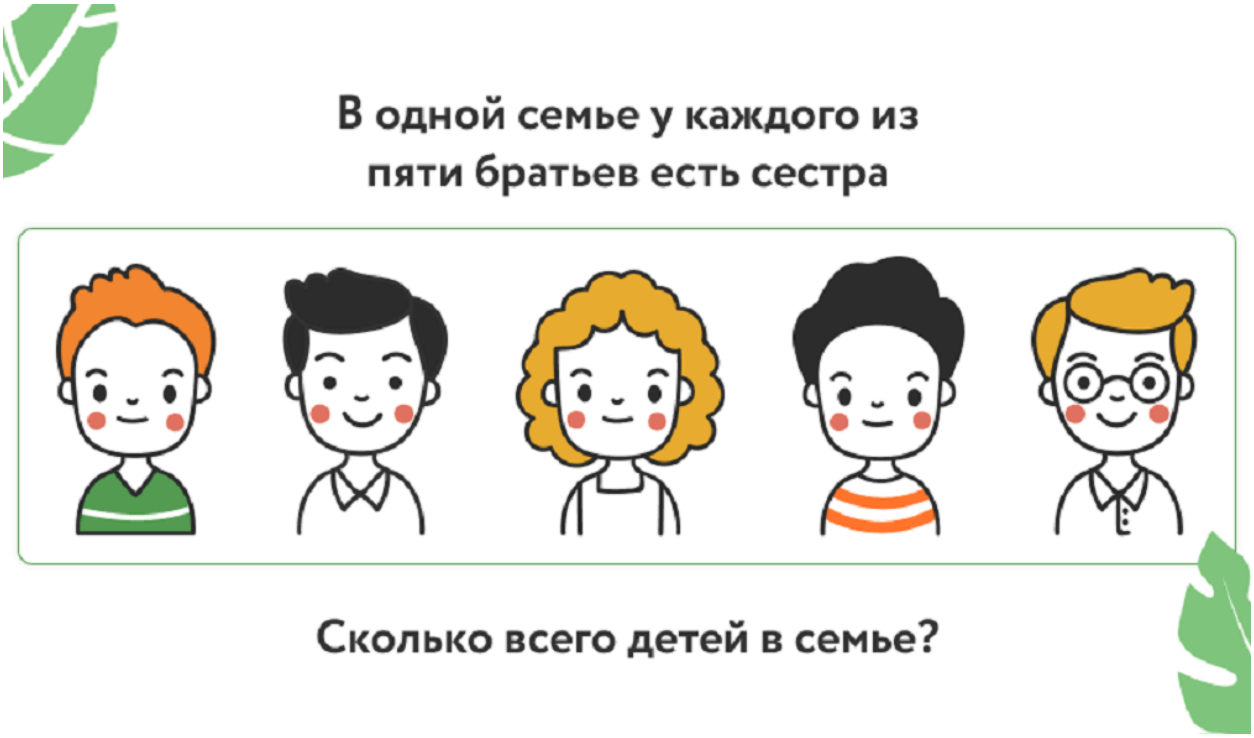

The thinking of younger schoolchildren undergoes significant changes. For first-graders, the main type of thinking is visual-figurative. The specificity of this type of thinking is as follows: the solution to any problem is carried out through internal actions with images. Elements of conceptual thinking and such mental operations as synthesis, analysis, comparison, classification, grouping, abstraction, necessary for proper processing of theoretical content, are formed. Sensitive and effective analysis prevails. This means that students quite easily solve educational problems in which they can use practical actions with objects or find parts of objects by observing them in a visual aid.

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The development of abstraction in students is manifested in the formation of the ability to identify general and essential features. One of the features of abstraction among elementary school students is that they sometimes mistake bright and external features for significant features. Often, instead of generalization, synthesis is used, i.e., they combine objects according to certain cause-and-effect relationships and according to the interaction of objects, and not according to their common characteristics[8].

The content of the educational standard presupposes the formation of universal educational actions in younger schoolchildren: personal, regulatory, cognitive, and communicative. In accordance with the standards of the second generation, cognitive universal actions include general educational, sign-symbolic, informational, and logical. From the above it follows that already in elementary school children must master the elements of logical actions. Therefore, one of the most important tasks facing a primary school teacher is the development of all qualities and types of thinking that would allow children to build inferences, draw conclusions, justify their judgments, and ultimately independently acquire knowledge and solve emerging problems[9].

The thinking of a primary school student is characterized by a certain predominance of the concrete, visual-figurative component, the inability to differentiate the features of objects into essential and non-essential, to separate the main from the secondary, to establish a hierarchy of features and cause-and-effect relationships, and relationships. The main features of the logical thinking of younger schoolchildren are the predominance of sensory, active analysis over abstract analysis; carrying out synthesis mainly in a visual situation without interrupting actions with objects; substitution of the comparison operation by the juxtaposition of objects, which are more easily determined in properties than in connections and relationships between objects; lack of formation of basic skills for generalization; inability to identify essential features, most often replacing them with external bright features of objects.

The capabilities of younger schoolchildren are much wider than the logical activities that are mainly carried out in elementary school. They can master more complex theoretical and logical material[1-28]. A certain developmental potential in this regard is technology lessons. The specificity of the educational subject "Technology" has its own characteristic features, a certain educational and educational-subject environment, therefore, when revealing the content of the material being studied, teaching aids in technology lessons are in most cases used comprehensively. Each of these teaching aids, depending on the pedagogical situation, content and typology of the educational subject, has certain didactic functions and capabilities. Based on this, we can conclude that students are aware of the need to develop logical thinking.

The logical thinking of younger schoolchildren is based on solving non-standard problems in their unity: training, education and development. The criterion for the development of logical thinking is the regular use of non-standard problems in mathematics lessons and in extracurricular activities.

By regularly using non-standard tasks, the teacher can shape the development of logical thinking. As you know, thinking is closely related to learning, so the development of logical thinking, based on solving non-standard problems, will help students develop logical thinking. The latter, in turn, will not be unfounded statements, but will be conscious and meaningful beliefs of each student. The development of logical thinking as a pedagogical process must be carried out in accordance with the laws of development of the child's body, in unity and harmony with the intellectual development of the child.

Since logical thinking can be considered as a new priority direction of pedagogical theory and practice, its content today is at the stage of formation, revision of the object of study, determination of methodological approaches.

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