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THE USE OF INDEPENDENT LEARNING IN THE FORMATION OF MATHEMATICAL CONCEPTS IN PRESCHOOLERS

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ABSTRACT:

The article analyzes an example of independent learning, teaching mathematics to preschoolers and improving the educational process in preschool education based on the formation of elementary mathematical concepts in preschoolers.

KEYWORDS: concepts, mathematical concepts, process, level of development, research, imagination, independence of thinking, activity of thinking.

INTRODUCTION:

The subject "Foundations and methods of forming elementary mathematical concepts in preschool children" plays an important role in the system of training specialists in preschool education. Over the past three years, the entire system of teaching mathematics in preschool education in our country has undergone significant changes in scale and significance.

With the introduction of new goals for the school, the content of mathematical education at preschool educational institutions has radically changed. To effectively teach mathematics to preschool children, the future teacher must master the methodology of the course "Formation of mathematical concepts in preschoolers", designed for preschoolers. One of the goals of teaching mathematics to school-age children and improving the educational process in preschool education is to develop the ability of children to work independently by developing mathematical concepts.

To develop mathematical understanding in children, it is necessary to know the features and skills that are studied in pedagogy, philosophy, logic, psychology and a number of other fundamental sciences. The process of solving mathematical problems requires independent thinking in its essence.

The level of development of mathematical concepts varies from person to person. Its formation requires constant exercise. These exercises begin in the family and early childhood education. Persistence is formed as a result of independent overcoming of each independently solved problem, structured problem and difficulties arising in the process of solving a problem, developing creative abilities.

According to psychologists, the problem of forming mathematical concepts is complex and multifaceted. At its core, every idea is a product of a creative, low or high level. Each idea is an independent action aimed at researching and creating innovations and their popularization. All research on the development of mathematical concepts is carried out in two main directions.

The first direction describes the features of mathematical concepts. In this regard, the work of many scientists was devoted to the study of problems. They clearly reflect several ideas:

- one of the ideas is that some features in the performance of children's practical activities distinguish between their various combinations, that is, the independent creation and implementation of practical tasks, solving problems of a creative nature, understanding the functional connection between explicit and implicit processes, etc.;
- the second group of studies includes the interpretation of the features of the formation of mathematical concepts through the wealth of knowledge and the degree of their assimilation;

- the third connects the basis for the formation of mathematical concepts with the general abilities of teachers, manifested in solving various problems (for example, a set of concepts: addition, reasoning, identifying a logical connection, knowledge).

Research in the second direction is devoted to the study and explanation of the mechanism of formation of mathematical concepts, their specifics. At the same time, an attempt was made to link the formation of mathematical concepts with personality traits (interest in the profession, the importance of creative thinking for a person, characteristics of a person's age). The child is believed to have formed mathematical concepts. If you have the ability to innovate in problem solving, an interesting problem-solving method, abandon the standard methods that have always been used, find new solutions to problems, understand the essence of the problem and find different ways to solve it, solve practical problems, predict if mathematical concepts are advanced.

L.S. Vygodsky studies the problem of the development of thinking and, first of all, anticipates the formation of mathematical concepts. At the same time, he emphasizes the need to find the most favorable conditions for the formation of mathematical concepts in children.

According to L.S. Vygodsky, the development of a child's imagination does not occur without the process of mastering knowledge, only a set of educational information (knowledge, cognition) moves thinking, develops the thinking of children. In turn, the formation of mathematical imagination is a prerequisite for a high level of knowledge and mastery of knowledge.

After L.S. Vygodsky, many psychologists and didactics believe that teaching - a source of development, knowledge and skills of teachers - is one of the important conditions for their development. At the same time, it is important to take into account the process of creating imagination in the learning process, that is, take into account the level of development of mathematical concepts assimilated by teachers, and move them to the next simpler area. To define this area, L.S. Vygodsky recommends using two indicators:

Acquisition of new knowledge by a child with the help of adults;

The ability to apply the knowledge gained from the child for independent problem solving. Application of S. Vgodsky's proposals in practice:

Shows children how to solve a problem and allows them to solve a similar problem on their own;

Invites the child to independently solve the problem initiated by the teacher;

Advises the child to solve more complex problems;

Explains the principle of problem solving, asks useful questions, poses problems, divides the problem into parts, and so on.

We also believe that it would be useful to use the proposed methods to determine the imaging process in the process of solving the problem.

The depth of thinking is characterized by mathematical precision and the ability to penetrate the essence of the problem, the ability to distinguish the primary from the secondary.

Elasticity of thinking is characterized by the ability to easily switch from one mode of activity to another, to change the mode of activity in accordance with the goal.

Thinking activity is a continuum of effort to solve a problem.

Critical thinking is the ability to assess the correct choice of a solution to a problem, the effectiveness of the method of work, the accuracy of the result, the ability to always keep activities in moderation.

Rational thinking is characterized by the ability to compare ways of working, setting different parameters in order to find ways to solve a

problem in less time.

Originality of thinking lies in solving a problem or a given problem in a wonderful, different way. This often manifests itself as a result of depth and depth of thought.

Independence of thinking is characterized by the ability to independently find a way to solve problems, without outside help, the ability to see intermediate and final results of activities, independence, freedom and validity of opinions. In conclusion, in the formation of the mathematical imagination of children in preschool education, the importance of independent tasks with them is great, and these lessons help to further develop their mathematical thinking skills.

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