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Use Of Didactic Games In The Process Of Forming Elementary Mathematical Ideas

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Abstract. This article discusses the use of didactic games and types of didactic games in the process of forming elementary mathematical concepts.

Key words: Didactics, mathematical exercises, games, free time, instructional and oral methods, independent exercises.

Introduction

It is known that in pre-school educational organizations, the child learns the content of knowledge according to the content of the game through the actions and rules of the game, without pre-planning. All types of didactic games are effective tools and methods of forming elementary mathematical concepts. Physical and verbal games are played in and outside of math classes, and board-printed games are usually played during free time from classes.

Children acquire knowledge in the form of action methods and corresponding imaginations outside of training. In plot-didactic, didactic and other games, conditions are created for clarifying, strengthening and systematizing this knowledge. The method of teaching and formation of elementary mathematical ideas involves the use of various games, its separate elements, methods, game and didactic beginnings, the leadership and teaching role of adults and the activation of children's knowledge. Instructive and verbal methods are used together with practical and game methods to form elementary geometric images. This does not diminish their essence. Kindergarten widely uses instructional, oral and practical methods, which are used in an organic connection with each other:

Instructional method is the main method of teaching, it has a practical character with instructional action, it is performed with the involvement of various didactic tools, it allows children to develop their skills and abilities.

The following requirements are imposed on him:

- the accuracy of the methods of showing the movement, divided into parts;
- expression of actions with verbal explanations;
- accuracy, brevity and expressiveness of the observer's speech when showing;
- activation of children's perception, thinking and speech.

Instructions for independent exercises. This method is related to the educator's demonstration of the methods of action and is derived from it. The instructions show what to do and how to do it to get the desired result. In large groups, instructions are given completely before starting the task, and in small groups, they are given before each new activity.

Explanation, note, instruction. These verbal methods are used by the educator to show the method of action or to help children complete tasks, prevent mistakes, and eliminate difficulties. They should be short, clear and descriptive. In groups of preschool children, it is appropriate to show by introducing new actions (putting next to, measuring). But it is necessary to activate the mental activity

that destroys direct imitation. When mastering a new movement, forming counting and measuring skills, repetition should be avoided. Mastering the movement and improving it is carried out on the basis of verbal methods - explanations, instructions, questions. At the same time, the speech expression of the method of movement is mastered.

One of the main methods of forming elementary geometric ideas is the question-and-answer method for children: reproductive-mnemic (regarding assumptions) questions (what is this? what is this figure called? how does it differ from a square triangle?); reproductive-cognitive questions (if I put one more cube, how many cubes will be on the shelf?; productive-cognitive questions (what needs to be done so that the circles are 9?). Questions activate children's perception, memory, speech, mathematics and logic ensure the understanding and mastering of the material. A number of questions are used in the formation of elementary geometric concepts. These are directed to the description of specific signs, properties, results of practical work of a geometric object, starting from the simplest questions that record its properties, Complex questions that require making connections, relationships, connections, justifying and explaining them, and the simplest proofs are very important. Such questions are often asked after the example is shown, after the children have completed the exercises. For example, children After dividing the paper rectangle into two equal parts, the educator asks: "What did you do?" What are these parts called? Why can each of these two parts be called a half? What is the shape of the parts? How to prove that squares are formed? What should be done to divide a rectangle into four equal parts? Different questions by their nature invite cognitive activities in different languages, i.e. starting from reproductive activities that reconstruct the learned material, to productive activities aimed at solving problematic issues. Requirements for questions are as follows: accuracy, beauty (laconicism); Vagueness of expressions, i.e. asking for the same thing in different ways; logical consistency; optimal balance between reproductive and productive questions depending on the age of the children and the material being studied; questions should arouse the child's mind, develop his thinking, force him to think, distinguish what is needed, analyze, compare, contrast, and demand generalization; the number of questions should not be large, but sufficient to achieve the set didactic goal; guiding and alternative questions should not be used. Children's answers according to the nature of the questions: short or full; independently understood; clear, clear, sufficiently resonant; it should be grammatically correct (the order of words, the rule, their adaptations, the use of special terms should be followed).

Inspection and evaluation. These methods are interconnected. Inspection is carried out by observing the process of children's performance of the task, results of their work, and their answers. These methods are carried out with direct assistance of instructions, explanations, demonstrations, demonstration of actions by adults, correction of errors is also added. Errors are corrected during individual and group work with older preschoolers. Practical and verbal errors should be corrected. The teacher explains the reasons for the mistake, gives an example, uses other children's actions and answers as examples. The teacher gradually combines self-assessment and peer-assessment. As soon as children know the mistakes they can make in counting, measuring, and simple calculations, they try to prevent them.

Actions, methods and results, behavior of children should be evaluated. An adult-directed assessment is combined with peer assessment and self-assessment. Examination and assessment of children's knowledge and mastery of movement methods depending on their age has its own characteristics. The results are also checked, the differentiation and meaningfulness of the assessment increases. In addition to teaching methods, all these methods also perform educational functions: they help to cultivate the ability to be kind to friends, the desire to help them.

Comparison, analysis, synthesis, generalizations are not only cognitive processes (operations) during the formation of elementary mathematical ideas in children of preschool age, but also appear

as a methodical method that determines the direction of the child's thinking during the teaching process. Geometric shapes are compared according to the amount of similarities and differences between objects, shape, size, spatial location, time interval - duration. They are first taught to compare a minimum number of items. After that, the number of items will be increased and the level of comparison will be reduced accordingly. Analysis (analysis) and synthesis come together as methodological methods. The use of these methods can be used as an example of the formation of ideas about "many" and "one" in children. These concepts are developed through observation and hands-on activities with objects.

The educator brings as many toys as there are children in the group. Children are given one toy each, and then they collect the toys together. Before the eyes of the children of the group, the group of objects is broken into separate objects, and from them a whole is formed. Based on analysis and synthesis, children are taught to generalize. It summarizes the results of all observations and actions. Through these methods, quantitative, spatial and time-related relationships are determined and directed to separation. Generalization is done at the end of each part of the training and at the end of the whole training. First, the educator summarizes, and then the children themselves. Comparison, synthesis, analysis, generalization is carried out on the basis of instruction, involving various didactic tools. Observations, performing practical actions with objects, reflecting their results in speech, and asking questions to children are external expressions of methodical methods. These methodological methods are inextricably linked with each other and are often used in a complex (together) manner.

In the process of forming elementary mathematical ideas, some special methods of movement appear. These include placing on top of and next to, checking the shape of the item, weighing the item by hand, inserting chip equivalents, counting by ones, and counting by ones. These methods are acquired by children in the process of showing, explaining, performing exercises, and later use them in checking, proving, explaining and answering questions, games and other types of activities.

Modeling is a guided practical method. This method includes the creation of models and the use of these models for the purpose of forming elementary mathematical concepts in children. Although the theoretical and precise methodological development of this method has just begun, it is extremely promising due to the following factors.

• the use of models and modeling puts the child in an active position, develops his cognitive activity.

• a child of preschool age has some psychological basis for introducing some models and elements of modeling - instructional affective and instructional figurative thinking.

• all mathematical concepts, without exception, are considered a unique model of real existence. Models should be considered as a sufficiently effective didactic tool. When mastering the methods of using models, a special field of relations opens before children - the field of real relations with models, and two closely related plans of reflections are formed, respectively - the plan of concrete objects and the plan of models reconstructing these objects. These reflection plans are instructive and of great importance for the development of conceptualization. Models can perform different roles: one is to describe external relations, to help the child to build connections that he cannot notice on his own. others describe sought-after but hidden connections, properties of things that are not directly perceived. Formation of elementary geometric images, object, object - schematic, graphic models are used.

The use of models and modeling should be integrated with other teaching methods.

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