STAGES OF DEVELOPING ALGORITHMIC SKILLS IN EDUCATIONAL GAME ACTIVITIES

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The content of teaching methods aimed at the formation of algorithmic skills should use all the concepts that are traditionally formed in preschool education.

According to the qualification requirements of preschool education [1], the content of the preschool education program in the field of education "Development of knowledge" provides the formation of basic concepts: shape, size, space and time, cause and effect.

The development of algorithmic skills in preschool children is carried out through the content of teaching. First, the algorithm is one of the oldest fundamental concepts. Second, in the process of learning it, children are exposed to different algorithms of operations: stacking, gluing, sequencing, performing different tasks. In addition, in the process of mastering basic concepts, preschoolers act on intuitive norms, use material and graphical models, and perform coding and decoding of data specific to working with algorithms. Thus, they develop visual-practical and visual-figurative, and then verbal-logical thinking.

The teaching methodology, which provides the formation of algorithmic skills in preschool children, includes three stages corresponding to three modules: "linear algorithms", "network and cyclic algorithms", and "application of algorithms".

The Linear Algorithms module is the first stage in the development of algorithmic skills, in the middle group, children aged 4-5. An analysis of the content of the First Step program [3] shows that in the middle group, preschool children:

- In the concept of calculation, quantitative, numerical representations and counting

- to distinguish similarities and differences of objects, to combine objects, to distinguish group parts, to compare groups of objects on the basis of pairs, to count

- 5 or in the range of 8, depending on the program, comparing consecutive numbers based on the display, counting in order, counting the stated number of objects from a large number of objects;

- in the assimilation of quantities

- using the method of direct comparison of objects in space by size

- comparison of length, width, height, construction of a sequence of up to five objects in ascending or descending order;

- in the development of concepts related to the form;

- to distinguish different forms of the same size, to describe their properties; - in mastering spatial images;

- spatial relationships: front-back-middle, right-left, far-near, up-down, moving in the desired direction, moving objects have the ability to determine the position relative;

The main methods studied in the middle group, which have a linear algorithm structure, include: the rule of superimposition and addition, the counting algorithm, the size comparison algorithm, and the construction of a sequence within five subjects. At this stage, the terms "algorithm", "rules", "plan" are not included. At this age, the child needs to develop the ability to perform linear algorithms on the material. Preschoolers need to develop the following skills:

- Execution of linear algorithms for various tasks;

- observance of the purpose of activity;

- control and correction of linear algorithms with the help of adults, as well as the implementation of their own actions;

- describe the implementation of a linear algorithm using understandable language tools.

According to the age characteristics of preschool children, at this stage, in the process of performing tasks, in the process of developing algorithmic skills, a fully demonstrative basis of action algorithms is used. Based on the idea of a complete exponential basis of operations, we have introduced the concept of "exponential basis of action algorithms", which is understood as the reference basis of operations in the process of creating and modifying algorithms in the performance of tasks. According to the theory of the gradual formation of mental operations, training to perform linear algorithms is based on goal-setting [2], [4]. Under the guidance of an educator, the planned training in new algorithms is phased division, highlighting the basic steps and the conditions for their proper execution. Otherwise, preschoolers learn the basic algorithms of actions that lead to difficulties in mastering in elementary school by independently testing and skipping steps, using the error method.

The Linear Algorithms module combines different knowledge about linear algorithms. In this module, the emergence of an algorithm in the process of task performance, the problem of task performance is considered as a necessary condition for achieving the goal in the educational process and in daily activities. Thus, the definition of basic concepts, acquaintance with linear algorithms, how to perform the task given by the educator, or discussion of the rules of the game occurs.

The main purpose of the module is to develop the skills of organizing their activities using a linear algorithm in the process of teaching preschool children: the adoption, planning, implementation and control of future activities. Planning includes: knowing the goal and maintaining a linear algorithm for solving it, dividing the activity into separate stages.

Execution is the execution of a series of algorithmic operations in a strictly defined order. Primary control and evaluation of one's own actions is the ability to evaluate the achievement of the desired result, the ability to adequately understand the value of one's own actions and, if necessary, make changes to the algorithm of one's own performance.

The process of developing algorithmic skills in the educational game on the development of concepts for the formation of concepts consists of four stages: goal setting, planning, implementation of the plan, reflection.

The first stage. Goal setting phase. It involves creating a psychological focus on educational play activities, checking readiness for lessons, identifying the meaningful scope of play activities, and relating them to previous experiences of preschool children.

In order to prevent the topic of the lesson from appearing by chance and being posed by the educator, the child should first act in a familiar situation and then create a new situation that the child should solve.

There should be difficulties in the child's activities, it should be expressed in speech, the causes of difficulties should be identified, the impossibility of following the rules. The game stops. The educator records the children's questions, explains the topic of the lesson, and sets goals with the children.

The second stage. Planning phase. This stage includes the analysis of the situation, the problematic presentation of the material in the form of a leading dialogue, the problematic dialogue on how to get out of a difficult situation, the introduction of assumptions to get out of a difficult situation.

The children, with the help of the educator, have found a way out of the difficulties, the educator corrects the children's options, and a new algorithm emerges that needs to be tested.

The third stage. The implementation phase of the plan. Preschoolers return to the game mode and complete the game, taking into account new situations, using a new algorithm to complete the task. The educator, if necessary, corrects the preschoolers by showing the correct action, using counseling cards that show the correct steps of the algorithm. The educator should help the children to communicate their actions with speech and the children's actions with comments. The educator checks how the children remember the algorithm. It can be manual work, demonstration, algorithmic mapping.

The fourth stage. Reflection phase. The educator organizes the comparison of the results achieved by each preschool child with the sample, monitors and evaluates, and, if necessary, corrects the task. The educator shows what to take, and the children have to compare how they did with the example.

Thus, the educator, together with the children, determines the practical application of the new algorithm, gives an emotional assessment of the lesson, and when each child completes the algorithm, monitors the achievement of the set goal, evaluates its actions.

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