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THE SPECIFICS OF STUDENTS' THINKING IN PRIMARY SCHOOL

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A B S T R A C T

The article argues that the acquisition of knowledge by a child in the process of teaching younger students may be the result of a different type of thinking, which is called empirical. At the same time, it is reported about the acquisition of knowledge based on empirical thinking, comparing the external similarity of objects and phenomena in the environment, and identifying common features.

K E Y W O R D S

Empirical, logic, thinking, didactic game, student, learning, mental attitude.

Introduction

A special feature of a child's mental health is his activity in relation to cognition. Children's curiosity is always aimed at learning about the world around us and the world order. While playing, the child tries to identify causal relationships and connections between them in his experience. For example. he himself can expose which objects are sinking, which objects are floating. The more active a child's mental relationships are, the more questions they ask, and these questions become more diverse. A child can be interested in everything in the world: what is the depth of the ocean? How do animals breathe? Why does snow remain on the mountain tops, while it melts at the bottom?

The child always strives for knowledge, and the assimilation of knowledge is accompanied by numerous questions “what for?This is achieved by getting answers to questions such as ”how“, ”how", "how", "why".

Forced to use the knowledge he has, he imagines the situation and tries to find a possible way to answer the question. The child, imagining a real situation, moves through it in his own mind. Thinking about the implementation of a problem solution as a result of internal imaginative actions is called visual-figurative. Imaginative thinking is the main manifestation of thinking in primary school age. Of course, at the younger educational age, a child thinks logically, but at this age he often relies on exhibitionism.

Psychologists have studied two types of thinking-empirical and theoretical.

Theoretical thinking is characterized by:

- reflection, that is, the child's awareness of his actions and their compliance with the conditions of the case;
- analyze the content of the problem in order to find a common solution, and then transfer it for application to another class of similar problems.;
- drawing up an internal action plan to plan and execute them in your mind.

Research has shown that in the process of learning at school, a child's acquisition of knowledge can occur as a result of thinking in a different form, and it is called empirical. The acquisition of knowledge based on empirical thinking is carried out as a result of comparing external analogies of objects and phenomena in the surrounding world, identifying common features.

How does the uniqueness of empirical and theoretical thinking manifest itself in students, how is it determined, which way is the development of thinking in primary school children?

For example, in elementary grades, important mathematical operations that students learn are addition, subtraction, multiplication, and division. After these operations are mastered, their consolidation is usually verified by solving a large number of homogeneous mathematical problems.

To determine whether theoretical thinking has been formed, an experimental test situation is compiled, consisting of two parts.

In the first part, students are offered several consecutive tasks, selected in such a way that the same tasks are similar in presentation, and the second ones are similar in answers, but the ways of their mathematical solution may differ.

Issue 1. Three birds landed on a tree. Another bird joined them. How many birds are sitting on a tree?

Issue 2. There are 17 birds sitting on the tree. 13 birds flew away. How many birds are left on the tree?

Issue 3. 18 birds were divided into 3 equal flocks. How many birds are in each swarm?

Issue 4. The boy was given 7 apples and 2 pears. How many fruits were given to the child? (The solution method is common to the first problem).

After successfully solving the presented tasks, students are asked to classify (group) them.

Paying attention to the signs by which the student is guided in solving the given tasks, two main classification options can be distinguished: when the student focuses on the task based on its secondary, external features (empirical approach) and when the student focuses on the significant features of the problem, mathematical methods of action (theoretical approach).

The reader's choice of the next option, in the course of solving the problem, not only obtained the final result, but also identified a common method for a set of tasks presented in the appropriate form.

When classifying the issues being solved, the children approached them in different ways: they divided the tasks into groups depending on the answer, the form of presentation and the method of solution.

Theoretically, the specifics of generalizing analysis can be identified by students in the course of solving the same type of tasks in increasing order of complexity. However, depending on the classification of the solution of such problems, it is possible to judge the presence or absence of theoretical analysis among students.

For example, the following task is given: without disturbing the sequence of numbers in each presented row, arrange between them arithmetic operations (addition, subtraction, multiplication and division) and brackets so that as a result of these actions, a number is obtained in each row.:

1) 123 = 1
2) 1234 = 1
3) 12345 = 1
4) 123456 = 1
5) 1234567 = 1
6) 12345678 = 1 etc.

If the student solves each question as a new one for himself, without highlighting the general principle of construction in them, then the child signals that he is focused on external, insignificant signs. This means that the solution in this case is carried out using errors and a method for checking them. If, in the process of solving one or two tasks, the child discovers his general principle of solution, this means that he has analyzed the solution of the initial tasks and, in solving others, relied on the conclusion he drew from them, as well as on their conditions.

These tasks can be performed empirically, based on the haphazard use of arithmetic operations:

(1 + 2) : 3 = 1; 1×2 + 3 – 4 = 1; (1 + 2) × 3 : (4 + 5) = 1; 1 + 2 + 3 – 4 + 5 – 6 = 1 etc.

Also 1, 3, 5, 7... (odd) tasks have their own solution: (1 + 2) : 3 = 1; ((1 + 2) : 3 + 4) : 5 = 1; (((1+2) : 3+4) :5 + 6) : 7 = 1 etc.

2, 4, 6, 8... (paired) tasks are solved as follows:

1 – 2 + 3 – 4 = 1; (1 × 2 + 3 – 4 + 5) : 6 = 1; ((1 × 2 + 3 – 4 + 5) : 6 + 7) : 8 = 1 etc.

Research by most psychologists and educators has shown that primary school students can successfully master theoretical material in mathematics, their native language and other academic subjects under certain conditions (set tasks to be studied and solve them using the presented methods).

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