



## Features of Thinking of Students in Primary Classes

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### ABSTRACT

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.

### Keywords:

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

A feature of a child's mental health is his activity in relation to cognition.

A child's curiosity is always aimed at understanding the world around him and the structure of the world. While playing, the child tries to determine cause and effect and the connections between them in his experience. For example, he himself can understand which objects sink and which float. The more active a child's mental relationships are, the more questions he asks, and these questions become more diverse. A child may be interested in everything: how deep is the ocean? How do animals breathe? Why does snow accumulate on the tops of mountains and melt at the bottom?

A child always wants to know, and the acquisition of knowledge occurs by obtaining answers to a large number of questions, such as "why?", "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 imagines a real situation and mentally moves around it. Thinking about solving a problem as a result of internal figurative actions is called

demonstrative-figurative. Imaginative thinking is the main form of thinking in primary school age. Of course, at the age of primary education, the child thinks logically, but at this age he often relies on visualization.

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

Theoretical thinking is characterized by:

- reflection, that is, the child's understanding of his actions and their compliance with the conditions of the question;
- the content of the problem is analyzed in order to find a general solution, and then transferred for application to a class of other similar problems;
- create an internal action plan to plan and execute them in your mind.

As a result of the study, it was found that a child's learning during schooling can be achieved as a result of thinking differently, and this is called empiricism. It is carried out as a result of acquiring knowledge based on empirical thinking, comparing the external similarity of objects and events of the world, identifying common features.

How does the uniqueness of empirical and theoretical thinking become invisible in students, how is it determined, what is the path of development of thinking in children of primary school age?

For example, addition, subtraction, multiplication, and division are important mathematical operations that elementary school students learn. Once these operations have been mastered, their consistency is usually tested by solving a large number of mathematical problems of the same format.

To determine the maturity of theoretical thinking, an experimental testing situation is created, consisting of two parts.

In the first part, students are offered several problems in a row, which are selected in such a way that some of them are similar in expression, others - in answers, but the mathematical methods for solving them may be different.

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

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

Problem 3. 18 birds were divided into 3 equal groups. How many birds are there in each flock?

Problem 4. The child was given 7 apples and 2 pears. How much fruit did you give the child? (The solution method is the same as in the first problem.)

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

If you pay attention to the signs that the student used when solving given problems, then there may be two main classification options: the student's use of unimportant, external signs of the problem (empirical approach) and a goal based on the important features of the problem, mathematical methods of action (theoretical approach).

When a student chooses the next option while solving a problem, he not only gets the final result, but also identifies a general method for the corresponding set of problems.

When classifying the problems to be solved, the children took a different approach: they divided the problems into groups depending on the answer, form of presentation and method of solution.

From a theoretical point of view, the uniqueness of generalized analysis can be determined by students when solving similar problems in order of increasing complexity. However, depending on the classification of solving such problems, one can judge whether students have theoretical analysis or not.

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

$$1) 123 = 1$$

$$2) 1234 = 1$$

$$3) 12345 = 1$$

$$4) 123456 = 1$$

$$5) 1234567 = 1$$

$$6) 12345678 = 1 \text{ va boshqalar.}$$

If a student solves each problem as if it were a new task for him, without highlighting the general principle of their structure, then the child shows that he pays attention to external, unimportant signs. In this case, this means that the solution can be carried out using the method of errors and their checking. If a child discovers a general principle for solving one or two problems, this means that he has analyzed the solution of the first problems and relied on the conclusions and conditions he drew from them when solving others.

These problems can be solved empirically, based on the unsystematic use of arithmetic functions:

$$(1 + 2) : 3 = 1; 1 \times 2 + 3 - 4 = 1; (1 + 2) \times 3 : (4 + 5) = 1; 1 + 2 + 3 - 4 + 5 - 6 = 1 \text{ and others.}$$

Similarly, 1, 3, 5, 7... (odd) problems have their own solutions.r: (

$$1 + 2) : 3 = 1; ((1 + 2) : 3 + 4) : 5 = 1; (((1+2) : 3+4) : 5 + 6) : 7 = 1 \text{ and others.}$$

2, 4, 6, 8... (even) problems are solved as follows:

$1 - 2 + 3 - 4 = 1; (1 \times 2 + 3 - 4 + 5) : 6 = 1;$   
 $((1 \times 2 + 3 - 4 + 5) : 6 + 7) : 8 = 1$  and others.

Studies by many psychologists and educators have shown that primary school students learn theoretical materials in mathematics, their native language and other academic subjects under certain conditions (posing the problems being studied and solving them using the presented methods).

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