

THEORETICAL ASPECTS OF DEVELOPMENT STUDENTS LOGICAL THINKING

¹Tugalov Farkhod Karshiboevich, ²Po'latov Navruz Nasri o'g'li

¹Associate Professor of Jizzakh State Pedagogical University

²Master student

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Abstract. *In the given article logical thinking benefit in terms of students understanding the laws of nature and society and support students manage their own actions are discussed.*

Keywords: *logical thinking, nature, society, concept, judgment, conclusion, comparison, analysis, synthesis, abstraction, generalization, classification, critical thinking, independent learning.*

It is important to suggest that the ability to think logically arises in the process of human development. Logical thinking is very important for a person, otherwise no one will be able to understand even the elementary laws of nature and society as well as control own actions.

Definitely, the objects of formal logical research are the basic forms of thinking: concepts, judgments, conclusions. The most important task of logic is to distinguish these forms, systematize and classify them.

The problem of logic is a question of truth, the cognitive connection of thinking with existence. The task of the science of psychology is to study the flow of the thought process, human mental activity, thinking in a specific relationship with other aspects of consciousness. The psychology of thinking and the science of logic, while generally different from each other, are at the same time closely related to each other.

It is not a secret that the task of the psychological study of thinking and its development is to identify mental activity as a process and, if possible, to identify its patterns. According to this task, the educational process also considers teaching the development of students' mental activity.

There are also thinking, reasoning, or verbal-logical thinking, which is characterized by the use of logical constructions that exist and operate on the basis of concepts, language and linguistic means.

The ability to learn is based on a whole complex of mental characteristics, such as universality, awareness, flexibility, stability, and independent thinking. Z. I. Kalmykova called the general quantitative indicator of learning ability according to these characteristics "mental talent." The generality of mental activity constitutes the core of the ability to learn, and its general indicator is the talent of thinking.

There is also analytical (logical) and intuitive (emotional-visual) thinking. Analytical thinking arises in the consciousness of a timely, clearly defined stage and predominantly thinking person. Intuitive thinking is characterized by rapid flow and the absence of clearly defined stages [1].

Theoretical (scientific) and practical thinking are distinguished by the type of problems being solved and the resulting structural and dynamic features. Theoretical thinking is knowledge of laws and rules, studied in the context of the psychology of scientific creativity. The result of theoretical thinking is the formation of theoretical concepts, scientific, mental models, hypotheses. He can predict new events, formulate laws. Generalization and analysis of mental abilities,

according to S. L. Rubinstein, determine the possibilities of rapid and high-quality transfer and development of theoretical thinking. Theoretical thinking is sometimes compared with empirical thinking (mainly based on direct sensations, emotional images and competencies, limited to general and meaningful conclusions at the representational level that form empirical concepts), since in any case the result of thinking is a generalization: in one case, scientific concepts, in the other - everyday, situational generalizations. Practical thinking is thinking that arises in the course of practical activity and is aimed at solving immediate practical problems (in contrast to thinking isolated from practical activity, as a special theoretical activity aimed at solving abstract theoretical problems that are only indirectly related to practice).

Edward de Bono divided thinking into vertical and lateral. Vertical thinking is logical and simple. It is used to improve and develop existing ideas. Lateral thinking is a way of thinking “around” a task or problem. It is used to develop new ideas and sometimes as a synonym for creative thinking. “Lateral thinking generates ideas, and vertical thinking develops them.”

Experts in psychology and related disciplines also emphasize critical thinking (sometimes called directed thinking). Critical thinking is defined as the use of cognitive skills and strategies that increase the likelihood of obtaining a desired outcome. It describes thinking as something characterized by control, rationality and purposefulness, reasoning used in problem solving, drawing conclusions, assessing probabilities and making decisions. Critical thinking is characterized by the ability to draw logical conclusions, create consistent logical models, and make decisions to reject, agree, or temporarily suspend judgment. “A model of logical thinking is critical thinking.” [2]

S. L. Rubinstein always believed that the most important thing in education is learning logical thinking, mastering not only logical actions and techniques, but also the ability to discover new connections, discover new techniques and solve new problems. Due to his suggestion “the general scheme for solving any problem are analysis and synthesis in their interrelation and interdependence.”

According to S. L. Rubinstein, mental operations (or logic) - comparison, analysis, synthesis, abstraction, generalization, classification, etc. represent different aspects of the main operation of thinking - “mediation”, i.e. revealing more and more important subject connections and relationships. He emphasized that the thinking process is a task aimed at solving the problem of the thinking process and is carried out as a system of intellectual actions, consciously organized in the thinking process with its conditions. Analysis, criticism and control carried out in this way characterize thinking as a conscious process.

The process of developing human abilities is the process of human development. A person’s mastery of certain knowledge and methods of action is a necessary condition, an internal state, a certain level of mental development - the development of mental abilities - this is a particularly important situation for educational activities.

One of the difficulties that students face in one of the main types of independent learning activities is the inability to highlight the main and important things in what they read. The difficulty of identifying the main thing leads to the inability to divide the text into semantic parts; give the title of the highlighted part in such a way as to express the main idea of the passage (to give a title to the passage means to speak briefly about the main issue). General and specific, primary and secondary, i.e., the inability to perform logical analysis leads to incorrect conclusions related to students’ assessment of subjects based on secondary, unimportant characteristics. [3].

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