

THE IMPORTANCE OF FOSTERING STUDENTS' CAPACITY FOR ANALYTICAL THOUGHT

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Abstract

This article presents considerations on the development of students' analytical thinking competencies in the process of higher education. Since they are the ones who embody the substance of the material being studied, the active critical activity of an individual during the learning process of understanding important terminology and concepts forms the basis of analytical thinking.

Keywords

knowledge, thinking, imagination, understanding, value, information, will.

The main tool of scientific knowledge is thinking. In domestic and foreign literature, various approaches to determining its essence have been developed. In each of these approaches, the main feature of thinking is the activity of a person in knowing the world around him and himself. In the first case, thinking means: a) the process of analyzing and evaluating the world around him, aimed at everything that exists, the existence of beings... that is, something inherent in human interaction with the environment. It is possible to distinguish levels of thinking, which depend on its degree of generalization and the degree of transition from phenomena to essence, to a deeper definition of essence b) "the active process of reflecting the objective world through concepts, judgments, theories, etc."

In the second case, thinking is explained as follows: a) "an internal active striving aimed at acquiring one's own concepts, understandings, feelings and will, memories, expectations..."; b) processing of ideas about the world, isolating what is important in general information and reflecting it in a generalized form [1, pp. 270-271]. Both approaches emphasize the need to resort to such scientific signs as "imagination", "concept", "values", "information". Their comprehension through thinking operations (analysis, comparison, synthesis, generalization, classification, etc.) ensures the formation of a worldview as a characteristic of the intellect.

A worldview includes a complete (synthesized) idea of nature, society and human, which is expressed in a system of values and ideals of an individual, social

group, society. In science, a worldview is defined as the sum of the results of metaphysical thinking and scientific interpretations (G. Meyer, M. Sheller). It reflects the subordination of historical experience, cultural values of the people, the era, the values of human communities, and is integrated into individual consciousness and self-awareness.

Therefore, the worldview is primarily a result of the globalization of thinking. Its generality is associated with the main relations and basic positions in information - categories. According to Plato, there are four categories in the information field: identity, difference, stability and variability. Aristotle distinguished seven more categories: essence, quantity, quality, relationship, time, place, possession (action, suffering, union, etc.). Their selection leads to complex thinking operations - maintaining logic, establishing identity, determining difference, similarity, cause and effect and opposition, which are characteristic of Analytical thinking.

The concept of analytical thinking began to be actively introduced into modern pedagogy and psychology in the 70s of the 20th century. This concept is based on Analyticity, the highest level of development of thinking, which is noted in the works of I. Kant and N. Hartmann, where they talk about categorical analysis as a synthesis of all intellectual operations to determine the belonging of a certain information to a certain category (category - class, type, variety, level) [2, p. 202]. Categorical analysis establishes the boundaries of knowledge, defines the boundaries of scientific analysis, which forms the basis of cognitive thinking [2, p. 202]. Its goal is to establish the absolute identity of knowledge and existence [IZ, p. 204], as a result of which values and the meaning of life are understood more deeply [3, p. 41-42]. The meaning of life has a "horizontal and vertical dimension" [V.E. Chudnovsky]. "The horizontal concept of the meaning of life is "strive forward", a complete vision of one's own life and a desire for higher values of life" [229].

In psychology, two aspects of such cognition are emphasized: on the one hand, the acquisition and processing of valuable information, and on the other, its application. Taking this into account, thinking is explained as a universal method of obtaining, processing and creatively using information, which is necessary for generalizing experience and connecting theory with practice. All types of intellectual activity are based on elements of thinking.

Therefore, the educational system sets the task of forming thinking as an integrating task, the purpose of which is to understand and reveal the essence of a phenomenon or process, to prove its reliability and objectivity. Thinking also

implies an assessment of the significance of what is being studied, which completes the activity. Therefore, thinking, along with the information component, is also characterized by a motivational-value component. These thoughts are relevant to various areas of human knowledge, but especially to the humanitarian ones, since education is aimed at educating a person in culture, including the formation of a culture of thinking. Research by A.V. Petrovsky, N.I. Shevandrin and others shows that the culture of thinking as a whole, characterizing the level of development of human intelligence, implies the interconnection of certain prerequisites, components and results in its formation and functioning.

The prerequisites for thinking are personal-intellectual qualities: objectivity, curiosity, logicity, Analytical, erudition (informativeness), systematicity and integrativeness of knowledge. They directly and indirectly determine mental operations, namely observation, comparison, abstraction, analogy, argument, analysis, synthesis and generalization. Intellectual activity is carried out on the basis of complex connections and interaction between personal qualities and mental operations. In accordance with the structure of the thinking process established by L.D. Stolyarenko, the first act is analysis. Moreover, it follows all subsequent operations. As a result of this interaction, a higher level of abstraction is formed: the separation of the main in a certain hierarchy of properties, the identification of their similarities and differences, causality, tendencies, development and self-development of a phenomenon or process, the establishment of their value bases and significance, the implementation of an objective assessment. Such qualitative indicators ensure the effectiveness of thinking, which in the process of cognition leads to a number of conclusions based on concepts, which theoretically characterizes science as a system of scientific views and concepts.

From this point of view, a complete definition has been formed that determines the essence of thinking in science: this is an active process that provides for the disclosure of legitimate connections of reality in the process of cognition on the basis of sensory data and their expression in a system of abstractions (concepts, categories) [4, p. 60]. This idea means that in the structure of mental actions, a legitimate absolutization of analysis and its functional significance for thinking occurs.

Analytical thinking indicates a high level of intellectual development, is the main means of cognition. When thinking is carried out using logical operations, the phenomena and objects under study are considered separately and, conversely, according to general signs, this is called Analytical (L.D. Stolyarenko). "Analytical

thinking has developed over time and has clear stages, which are significantly expressed in the mind of the thinking person".

The study of scientific literature has shown that the stages of Analytical thinking are associated with the Analytical-synthetic activity of a person, in which the process of cognition involves the division of the whole into parts (elementary analysis); the transition from the concrete to the abstract (abstracting analysis); the transition through the separation of common features in the concrete (generalizing synthesis); the identification of common features through the transition to the concrete (generalizing synthesis); the transition to the causes of certain phenomena or processes; and the determination of the cause and effect relationship. The identified features of analytical thinking made it possible to determine its criteria and indicators (Fig. 3). The methodology of L.D. Stolyarenko was used to determine the indicators of specific levels of analytical thinking.

Analytical thinking, in turn, is characterized by the following features: the ability to see and understand the essence of information, the active nature of the perception process, the complex use of operations such as abstraction, regrouping, making judgments based on analogies, and contrasting thinking (the logical basis of decisions made, etc.). The results of analytical thinking are reflected in certain indicators.

Analytical thinking implies a consistent but contradictory reflection of the real truth in the mind, which leads to doubts about its authenticity when an event occurs; a person's incomplete understanding of the reality of existence; active action based on concepts about the essence of an event or process; purposeful recording of reliable information; formation of relationships with people and sources based on a cognitive style; a professional approach to the past and present; an approach to events and processes aimed at optimal solutions.

In a generalized version of analytical activity, objects can be presented in the following form: information from the perspective of society, micropolitics, student and teacher, personal and performance. The future specialist connects his analytical activity with these objects in the process of professional training. This is necessary to determine the nature of social interaction between a person and society, to understand the business cooperation between representatives of micropolitics, to understand oneself and self-assessment, to understand a university teacher and assess his professional level, to establish a value attitude towards scientific knowledge. The results of this analytical activity include: understanding and assessing the potential of society in the life activities of each individual, the

environment in the socio-cultural environment, self-image as a future specialist, pedagogical interaction with university teachers, personal critical activity.

In general, the type of thinking and its direction determine the nature of the student's analytical activity. In pedagogical activity, human thinking is focused on three essences of any object: personality-forming (subject-object). This is the highest moral-ethical value associated with pedagogical work; information-analytical. This is a valuable social orientation (worldview); self-study, self-analysis, self-assessment of readiness for effective pedagogical work, interaction, self-education. This is the self-esteem of the future pedagogical personality. From this point of view, the competencies of analytical thinking are called upon to provide accurate information about the pedagogical potential of the student and the teacher, informational reflection of real reality, and the characteristics of education and pedagogical activity.

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