

PSYCHOLOGICAL AND PEDAGOGICAL ASPECTS OF DEVELOPMENT OF STUDENTS' LOGICAL THINKING

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Abstract. *Background:* In this article, interdisciplinary relations and the level of development of students' logical thinking are important. Through the analysis of the scientific and research work carried out by the scientists of our republic, the issues of developing the logical thinking of students are presented.

Method: This article is a set of methods aimed at ensuring learning in the research process: theoretical (analytical-synthetic, comparative-comparison, analogy), diagnostic (surveys, testing, observation, designed methods), prognostic (expert assessment, summarization of independent assessments), pedagogical experiment and mathematical methods (statistical data processing, graphic representation of results) were used.

Result: Thus, the pedagogical-psychological and philosophical foundations of the development of the logical thinking of students, the organizational structure of certain scientific views on the development of logical thinking, hypotheses and creative abilities, and the application of knowledge from various fields of science.

Keywords: pedagogy, professional competence, interdisciplinary approach, interdisciplinary connection, higher education pedagogy.

Introduction. Today, the main goal of developing the logical thinking of students is to make the young generation mature in all respects, well-rounded people necessary for the development of our society. A perfect person embodies spiritual and physical maturity. If work is done based on the socio-political, philosophical and educational views of our scholars such as Amur Temur, Muhammad al-Khorazmi, Abu Rayhan Beruni, Abu Ali ibn Sina, Alisher Navai, Zahiriddin Muhammad Babur, the development of students' logical thinking will become more perfect.

Logical thinking is the act of analyzing a situation and coming up with a sensible solution. Similar to critical thinking, logical thinking requires the use of reasoning skills to study a problem objectively, which will allow you to make a rational conclusion about how to proceed. Identifying the problem, acquiring relevant facts, analyzing probable causes, and testing alternative remedies methodically are all examples of logical reasoning. By following a logical procedure, you may narrow down the problem and develop an effective solution based on data and reasoning.

Thinking differs from other mental processes in that it emphasizes the existence of a problem situation, which, by solving it, distinguishes a person from emotional experience and makes certain practical or theoretical conclusions, and decides to expand the boundaries of knowledge. Thinking is often considered as a product of historical development of social practice, a separate theoretical form of human activity. Thinking reflects reality not only as simple images, but also as various connections and laws obtained theoretically. In this regard, A. V. Brushlinsky wrote: "the true nature of thinking is that it always discovers something new independently, always openly. First of all, thinking, as an unknown product of conscious activity, cannot be immediately

reached. On the other hand, it is very necessary for further activities. Contradictions between these situations are expressed in the process of formation of new psychic formations, which seek a specific task or problem and then show the discovery of ways to solve them. That is why thinking is considered as a process, not ready and presented in advance, but a formative process [1].

Main part: Pedagogical aspect of development of logical thinking in students consists in development and testing of necessary didactic conditions for organization of educational process. This, - writes A.D. Getmanova, - the science of pedagogy studies logical thinking by implementing cognitive processes in the process of education and upbringing of the growing generation [2].

Pedagogical technologies increase the productivity of the educational process, form students' independent thinking process, increase students' enthusiasm and interest in knowledge, form skills and competencies of solid mastering of knowledge, free use of it in practice. [3]. The mental development of students has a common feature that unites all the listed theories of education and development: developmental effects on the student are carried out with the help of various processes of educational change, external influence on the student's direct activity, content change, educational methodology, etc.

The researches of many pedagogues and Methodist-scientists have emphasized the need to train students in logical thinking methods. Some pedagogues understand the development of logical thinking as the acquisition of knowledge by students and the formation of skills and abilities in them, as well as their use in educational and practical activities. (N.N. Pospelov and L.S. Khadartseva [4, 5]). A logical method is a logical operation or action, as well as a combination of them used to solve a number of tasks [6, 9]. Logical operation is a method of designing, establishing connections and relationships between them [7].

In many studies, such a phenomenon is found in the study of all disciplines, as a logical culture is formed, which contributes directly according to the characteristics of each of them. Logical culture is defined as "a system of thinking skills that allows you to express existing thoughts in a clear and understandable form and acquire new thoughts only in such a form" [8,10].

Today, future teachers are not sufficiently aware of the priorities of educating students. They do not fully understand the content of the curriculum. In the process of pedagogical practice, they prefer to use traditional methods and methods, to use an authoritarian work style.

In addition, there is no system of sufficient training of future teachers for the educational processes implemented in general secondary educational institutions. They do not have enough knowledge and ideas about the guiding factors, consistency, integrity and interrelationship of educational processes, humanistic style, principles, pedagogical conditions, socio-pedagogical directions.

Based on the analysis of scientific views on the levels of manifestation of abilities in students and the procedures for its determination, the criteria for the development of logical thinking of students were determined: possession of positive emotional perceptions; creative interest, desire to know; independence; decision making; confidence in one's own strength and capabilities; clear goal orientation; emotionality; being able to see the problem; alternative (alternative) thinking; divergent thinking; clarity of thought; associative of memory; integrity and independence of perception; creative thinking; level of self-assessment; tolerance; level of development of intuition.

Based on these criteria, the lower, middle, and higher indicators of the development of students' logical thinking were determined based on conditionally classifying them into four - motivational, emotional, intellectual-cognitive, and practical groups.

The low level of dynamics of development of logical thinking of students, the lack of bright manifestation of interests in the process of educational and research activities, the lack of a responsible and stable attitude to creative activities, the occurrence of difficulties in interpersonal relations, difficulties in research activities, communicative, working with information, general cultural, was characterized by lack of formation of creative competences.

Medium level - lack of interest in the process of educational and research activities, responsible and stable attitude to creative activity changes depending on the situation, incomplete understanding of the internalization of valuable attitudes in interpersonal relationships, difficulties in overcoming not so complicated situations in research activities, communicative, informational working with was manifested in the partial formation of general cultural and creative competences. High level - the determination of a valuable attitude to educational and research activities, a high level of social and cognitive activity, the formation of internal cognitive motives, the ability to overcome difficulties in cognitive and social description, the manifestation of a creative approach in the performance of research and research tasks, and the full formation of general educational competencies. reflected in aspects.

Conclusion

From what has been analyzed above it can be inferred that teaching students how to think is important and especially critical thinking is the most essential one. In pedagogy thinking is sometimes neglected so critical thinking should be encouraged and taught students how to do it with the help of creative exercises.

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