



MECHANISMS OF FORMING CRITICAL THINKING IN HIGHER EDUCATION STUDENTS BASED ON PROBLEM-BASED LEARNING

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Abstract

The article discusses the role of problem-based learning in the development of critical thinking in students, its pedagogical mechanisms and conditions for effectiveness. Methods that encourage students to think independently, argue, and analyze different points of view by creating problem situations are analyzed. The article also reflects interactive methods, principles of communication and cooperation, motivational and reflexive approaches in the formation of critical thinking.

Keywords: communication, critical thinking, problem-based learning, pedagogical mechanisms, interactive methods, independent thinking.

Introduction

In the current digital information age, it is important not only to arm the younger generation with ready-made knowledge, but also to form in them the skills of independent thinking, analysis, reasoning and drawing conclusions. In this regard, critical thinking is one of the main competencies of the modern education system. One of the effective methods of its formation is problem-based learning technology.

Problem-based learning encourages students not to memorize a ready-made answer, but to independently search for an answer, discover new knowledge and apply concepts in practice. In this case, the teacher organizes, directs and controls



the problem situation, and students actively participate in the process of research, analysis and communication.

When studying the problem of using pedagogical technologies in developing students' critical thinking, we must first have sufficient information about the concepts of pedagogical technology and critical thinking.

Literature review. An analysis of scientific studies, monographs and manuals (V.P. Bespalko, V.V. Guzeev, M.V. Klarin, V.M. Monakhov, V.Yu. Pityukov, G.K. Selevko, etc.), articles (T.S. Nazarova, L.Ya. Dyachenko, etc.) aimed at clarifying the essence and content of pedagogical technologies indicates that the following areas are distinguished in the structure of pedagogical technologies, the main of which are empirical, cognitive, heuristic, creative, inversion, integrative, adaptive, inclusive pedagogical technologies. The main characteristics of these areas are as follows:

Empirical - obtaining knowledge through the senses. In this technology, the main attention is paid to providing knowledge based on the natural development capabilities of the senses and their further improvement.

Cognitive - a technology for expanding the scope of knowledge about the surrounding world. It forms differentiated thinking, critical thinking, and develops the need for knowledge.

Heuristic - it is necessary to teach by asking guiding questions. It is a research method of education that serves to develop ingenuity, activity, attention, and develops optimized (choosing the most appropriate, suitable, and appropriate from several options) thinking.

Creative - has a research character and intensively develops goal-oriented creative thinking and critical thinking in students.

Inversion - has the property of studying information from different sides, replacing it, and develops a critical thinking system.

Integrative - determining a single correct conclusion based on the inextricable connection of the infinitely many small parts that make up the information, their integrity, and unity.

Adaptive - achieving the expected result based on facilitating and adapting the process of learning and using information and teaching.



Inclusive - the organization of the educational process on the basis of equality in the relationship between the teacher and students.

Currently, in addition to the above, there are other areas of modern pedagogical technology that are being tested by experts. [5].

It is known that if a person does not have a critical attitude to what he knows and masters, there will be no independence of thinking in cognitive activity.

Critical thinking is characterized by the ability of a person to critically evaluate his own and others' opinions, to fully prove and comprehensively verify all the rules and conclusions put forward. [4]. A person who is engaged in critical thinking never considers his thoughts to be absolutely true, flawless and complete. He always strives to verify and test them in practice, and if his thoughts do not correspond to reality, he looks for methods and evidence for the answer. Critical thinking [3] is, first of all, an orderly, determined and responsible mind that does not accept everything as reliable. Those who have a non-critical thinking approach accept any information they come across and the ideas that others have instilled in them as their own. Therefore, at the stage of development of society today, the issue of educating independent, free and critically thinking young people is the most urgent task for Uzbekistan.

Research methodology. The process of critical analysis must be continuous, the result of critical thinking is the development of critical thinking. For this to happen, teachers must be spontaneous in teaching and use modern pedagogical technologies in the educational process.

So, what is critical thinking? As for its definition, there are different opinions and assessments. Some researchers believe that "critical thinking", "analytical thinking", "logical thinking", "creative thinking" and others - and we can agree with this, remembering the etymology of this word. "Criticism" (from the Greek krite - "to evaluate, analyze, discuss"); Consequently, "critical" - "to evaluate, analyze". Critical thinking (alternatively dogmatic) can be understood as creative, analytical and constructive thinking. From a pedagogical point of view, we consider it as an active and interactive cognitive process. Critical thinking is interactive, creative, reflective thinking. Critical thinking means understanding and realizing one's own "self" objectively, logically, perceiving other points of view.



In addition, there are several definitions of the term "Critical Thinking". For example, J. Still, K. Meredith, and Ch. Temple's manual "Reading and Writing for the Development of Critical Thinking" ("Reading and Writing for the Development of Critical Thinking"), as a system of universal foundations of education, describes the widespread use of interactive teaching methods that allow for the effective development of critical thinking.

The famous American philosopher and educator D. Dewey describes the essence of critical thinking as follows: "Only a person's critical thinking about the conditions and results of experience can correctly direct the desires and interests of the individual."

As Diana Halpem writes in her book "Psychology of Critical Thinking" ("Psychology of Critical Thinking"): "critical thinking means a form of cognitive skills and strategy that increases the likelihood of achieving the desired result, which is characterized by restraint, logic and goal-orientedness."

Anderson and her co-authors state that "New situations Effective continuous learning for us is the problem of information and events being understandable. 0"Students can achieve the highest results only when they actively absorb information and events."

According to Polinska and Brown, "the learning process is more successful when various strategies for developing thinking activities are used. In this case, strategies ensure that the learning process is more conscious."

According to Resnik, "knowledge and creative thinking develop in students only when they can apply their knowledge to solve specific problems."

Ross states that "learning is based on students' prior knowledge and experiences. All this gives students the opportunity to connect new information with what they already know."

Banks explains, "Critical thinking and learning only produce good results when teachers correctly understand the diversity of ideas and experiences. If the spirit of "one answer" prevails, then it helps to think critically."

Agapov notes that "Critical thinking is a pedagogical technology aimed at developing students' skills in working with text, mastering all forms of oral and written speech, and exchanging ideas with peers on a specific text (communication skills, group work skills)." Critical thinking is about changing



the classroom environment, giving it a touch of excitement, and turning classes into a joy for both teachers and students. Such technology is based on ideas such as the multiplicity of points of view of thinking and interpreting the text, the reflexivity of the cognitive process, and a modern understanding of culture. The idea of personal value and the unconditional priority of creating favorable conditions for its development, self-awareness and realization are the most important.

John Barrell identifies the following characteristics of critical thinkers: able to solve problems; in solving problems show a certain determination; control oneself, impulsivity; openness to other ideas; can solve problems by cooperating with other people; can listen to the interlocutor; empathetic; has tolerance for uncertainty; can consider problems from different perspectives; • is able to establish many connections between events; tolerates a point of view different from his own; can consider several options for solving a problem; often ask questions: “What if?..”; can draw logical conclusions; think about his feelings, thoughts - evaluate them; is able to make predictions, justify them and set active goals for himself; can apply his skills and knowledge in different situations; is curious and often asks “good questions”; actively perceives information.

In conclusion, “A person who is critical-minded is familiar with certain ideas and considers the important consequences of their implementation. In this case, a person initially perceives these ideas with a certain level of distrust and compares them with opposing points of view. To substantiate them, he uses a system of additional considerations and develops his own point of view on this basis.” Critical thinking is a complex process of creatively combining ideas and possibilities, reconstructing a concept. It is also a process that occurs simultaneously at several levels of active and interactive cognition. A person who thinks critically is not affected by various unhealthy ideas, because he has his own firmly personal views.

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