THE RELATIONSHIP BETWEEN THE DEVELOPMENT OF ANALYTICAL THINKING AND PROBLEM-BASED LEARNING IN QUALITY EDUCATION

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Quality education is becoming more and more important nowadays. Therefore, this problem has become one of the most important issues in modern pedagogy. In this, in turn, it is related to the development of problem-based education. The basis of problem-based education is the intellectual activity of students, and it can be noted that this type of education can be used as much as possible to form and develop various aspects of analytical thinking. The methodology of studying the problem is based on a number of concepts such as "problem", "problematicity", "problematic situation", "educational problem", "problemization", "problematic task". The initial term for all the above concepts is "problem" - a question or a task that requires a solution, research, because it contains an explicit or implicit contradiction. The concept of "difficulty" reflects problematic and ambiguous characteristics, quality, and is visible as evidence of the presence of difficulties in the process of achieving educational goals in a clear or hidden form. "Problemization" should be understood as the process of forming and revealing the problems in educational activities described in detail in a specific problematic task. During the last decades, the changes in society became the basis for the humanization of higher education of pedagogy, its transition to the competence paradigm. This transition provides, on the one hand, a purposeful process for designing new pedagogical technologies, as well as a higher level of knowledge of the world around us.

The dynamics of social changes in the development of society and the state around the world, as well as the wide introduction of innovations in the process of development of modern society, determine new requirements for the formation of professional abilities for students studying in pedagogical higher education institutions. Their fundamental and methodical preparation, developed effective thinking, skills in analytical thinking and high information culture are gaining urgent importance.

One of the widely used and most requested pedagogical technologies for analytical thinking in quality education is problem-based learning. Teachers of higher education institutions understand the importance of using problem-based educational technology in the educational process, and in particular, in the study of humanities.[1] They are based on the fact that students acquire new knowledge to develop analytical thinking in the process of solving theoretical and practical problems in problem situations specially created for problem-based learning.

The essence of problematic educational technology in modern education is explained by the fact that information for the development of analytical thinking in students of higher education institutions is not provided in a ready form in the organization of the educational process.

[1] Анисимов, О. С. Основы методологического мышления / О.С.Анисимов. – Москва : Внешторгизд., 1989. – 412 с.

Instead, the teacher organizes a special problem situation, sets them a certain task, for which the students should conduct a certain independent research. As a result of such research activities, new knowledge, abilities and skills are formed, which are characterized by greater depth, consistency, and awareness. In addition, students' activeness in learning, curiosity, knowledge, creative thinking and other important personal qualities related to thinking are also developed.

Today, problem-based education is an education in which the teacher creates problem situations during training sessions and then organizes independent activities for students to solve them for analytical thinking, resulting in the development of analytical thinking based on the creative acquisition of professional knowledge, skills and abilities. Within the framework of the concept of developing analytical thinking of students, there are several different approaches to its implementation in the practice of teaching students of higher education institutions.

According to a number of scientists in world pedagogy, studying problem-based education is a set of actions to organize an educational task, formulate a problem in it, help students to solve this problem, check and strengthen their acquired knowledge.[2] It is believed that in problem-based education, students will develop and develop their creative abilities by acquiring knowledge and methods in solving problems of different levels of complexity, analytical thinking for themselves. Therefore, it can be emphasized that the valuable and person-oriented approaches implemented by the teacher are the most relevant.

In developing the quality of education, the idea of asking students complex questions that require independent thinking and obtaining new knowledge through analytical thinking has been rooted in foreign didactics and philosophy for a long time and goes back to the philosophical views of Socrates, the works of F. Aquinas, F. Bacon and I. Kant. Philosophers in their works developed the idea of refusing to "memorize" ready-made knowledge, they opposed views on the subject's activeness in learning knowledge. This contributed to the formation of independent approaches in didactics at the beginning of the 20th century, for example, the method of laboratory training, science teaching techniques, as well as heuristic, experimental-heuristic, laboratory-heuristic, and others.

According to many teachers, these methods are based on inquiry education. They see its essence in activating students' cognitive activity, showing their creative abilities, having a strong influence on the motivational shell of a person, and thereby creating conditions for their interest in the educational process.

In the last century, two main approaches to problem-based learning were formed in the framework of US science. The first was the ideas of the teacher and psychologist D. Dewey, who was the founder of the philosophy of pragmatism. In his pedagogical views, he repeated

[2] Антонов, В. И. Управление информационными ресурсами как важнейший фактор стабильности развития военных вузов / В. И. Антонов, В. К. Золотухин, Д. Н. Воробьев // Военная мысль. – 2009. №7 – С. 77–84.

the view of the founder of empiricism, F. Bacon, who believed that the basis of information about the surrounding world can only be his empirical activity, which confirms or rejects knowledge. D. Dewey also made sure that without practical actions, human knowledge remains only assumptions, that is, the learning process should be based on the independent activity of students with a learning-practical orientation. In his school, educational activities were based on practical game activities of students, but he could not create a holistic concept, and the theoretical foundations of problem-based education were implemented only in the middle of the last century.

At the same time, the second approach is based on the principles of behaviorism - this trend in American psychology connects complex mental processes, including learning, to the behavioral response to stimuli, that is, to the influence of the external environment on the organism. Thus, the American pedagogue-theorist William Burton presented the process of education as a simple change related to the change of reactions to a new stimulus of a person's previous experience. At the same time, U. Burton has given less value to the role of theory in the educational process, the influence of the external environment on the student's ability to think has been neglected.

Currently, the general concepts of problem-based education given by the description of many modern foreign scientists are based on the views of J. Bruner, an American teacher and psychologist, a specialist in the field of analytical thinking. He emphasizes the importance of students' creative thinking for learning. For this, it is necessary to pay attention to the organization and structure of new knowledge. At the same time, new theories revise the views of D. Dewey and W. Burton to get rid of the shortcomings of previous theories. For example, modern foreign scholars pay attention to the importance of the teacher's role in solving problematic issues, or prioritize collective efforts when considering a problematic situation, as opposed to the individualized activities of students.

Currently, problem solving problem based learning, learning-by-discovery, etc. are used in English language literature in the fields of philosophy and pedagogy. The purpose of such "problem-oriented education" is to help students in analytical thinking by forming flexible knowledge in learning subjects, effective problem-solving skills, learning self-management, internal motivation, as well as cooperation and interaction skills with other participants in the educational process.[3] In this context, problem-oriented learning is considered as a type of active learning.

In addition, problem-based learning has a number of advantages compared to traditional learning, namely:

- Helps logical, creative, dialectical thinking;
- Makes educational materials more clear, helps to turn objective knowledge into things

[3] Cottrell, S. Critical Thinking Skills. Developing Effective Analysis and Argument / Cottrell Stella. ISBN-13: 978-1-4039-9685-5 – Palgrave Macmillan. Houndmills, Basingstoke, Hampshire, 2005. – 234 p.

believed in personal thinking;

- Positively motivates students, that is, makes them interested in learning, increases the level of claims expressed in setting more and more complex goals, helps to experience intellectual satisfaction, to form a sense of confidence in their abilities and capabilities;
- It helps to form solid knowledge compared to the knowledge obtained in the "traditional" way.

The consistency of knowledge is ensured not only by the manifestation of students' activity and independence, but also has psychological reasons. When solving a problem, the student engages in research and performs certain intellectual actions. Not being solved for a certain period of time and therefore constantly returning to the learning process, the concentration on solving the problem forms more solid knowledge, skills and abilities compared to traditional education, where only ready-made knowledge is absorbed. However, in addition to the positive aspects of problem-based education, some disadvantages should be noted. The most important of them is that when solving a problematic task, the learner faces difficulties in the learning process, more time and effort is needed to overcome the learning situation, that is, more time is required for analysis, thinking, and solving compared to the traditional form of education.

Other important disadvantages of problem-based learning in providing quality education are requirements for high pedagogical skills of the teacher and having a lot of time to develop problem tasks.

Several independent stages can be identified in problem-based learning:

- getting into a problem situation;
- study the problem situation with analysis;
- promotion of hypotheses, their evidence and verification;
- final control of the correctness of problem solving.

Similar stages exist in the mental activity of a person in general, and thinking is based on the idea that a person who experiences difficulties is based on solving some kind of problematic situation that can be overcome only by forming their essence and understanding the conditions for overcoming them. At the same time, it should be noted that not every situation is problematic. He achieves this only after interacting with the subject and describing it in his mind in accordance with his knowledge, meanings, and goals. The fact that there is always such a discrepancy in a problem situation is often related to the subject's goals and behavior patterns. Contradictions in the structure of the situation can increase due to its complexity, because it contains many elements and their interactions, lack or vice versa, density of information, dynamics of changes occurring in the situation, etc.

In short, these complex situations, reflecting a problematic nature, include all social processes, including education. It should be remembered that the basis of uncertainty in the situation can

be in its different aspects and different combinations, which causes different problems, and this is important.

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