

PROBLEM-BASED LEARNING AT THE UNIVERSITY

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Abstract:

The article reveals the concept of problem-based learning in universities in modern conditions set by the requirements of the Federal State Educational Standards and modern society. Methods: research, analytical. Results: recommendations on ways to transform and form the creative ability of the individual.

Keywords: problem-based learning, creative personality, problem dialogues, traditional pedagogical strategy.

The main goal of modern education is the mastery by specialists of the methodology of creative transformation of the world. The process of creativity involves, first of all, the discovery of new things: new objects, new knowledge, new problems, new methods of solving them. Learning as a creative process is presented in the form of solving non-standard scientific and educational problems by non-standard methods. If training tasks are offered to students to consolidate knowledge and develop skills, then problem tasks are always a search for a new way to solve. As a psychological category, it reflects the contradictions of the subject in the cognition of the object. The same problem by different people or different groups of people can be perceived differently, cause difficulties in its understanding, be realized as a problem task, which formulates the essence of the problem and outlines the stages of its solution. Problem-based learning is the creation of non-standard situations, during which trainees learn new knowledge, skills and abilities. The formation of professional thinking of students is in fact, the development of a creative, problematic approach. University training should form the necessary creative abilities of a specialist. Elements of problem-based learning took place in antiquity and later in the Renaissance. These are the heuristic discourses of Socrates, the conversations and dialogues of Galileo. Pedagogy of J.-J. Rousseau – problem dialogues – were a favorite genre of the Age of Enlightenment[5, p. 5]. In the history of Russian

pedagogy, lectures by K. A. can serve as an example of a problematic presentation of the material. Timiryazev. The essence of the problematic interpretation of the educational material is that the teacher does not communicate knowledge in a ready-made form, but sets problem tasks for students, encouraging them to look for ways and means of solving them. The problem itself paves the way for new knowledge and ways of doing things. New knowledge is not given for information, but for solving a problem or problems. With the traditional pedagogical strategy – from knowledge to problem – students cannot develop the skills and abilities of independent scientific research, since they are given to assimilate it. finished results. Hegel aptly defined the role of scientific inquiry, saying that it is not the result that is the actual whole, but the result together with its formation. A naked result is a corpse that has left behind a tendency. Traditional lecture. It is necessary to give and clarify some physical concepts (absolutely black body), then explain the basic concepts of quantum theory, report the basic characteristics (for example, the distribution of the intensity of thermal radiation by frequencies), then derive the basic and derivative formula and show what scientific and technical problems can be solved with the help of this conceptual apparatus. Let's imagine a problem lecture. The lecturer talks about the ultraviolet catastrophe, about the problem of divergence of theoretical curves and the curve obtained by experiment, about the distribution of radiation intensity in the spectrum frequencies. It's then helpful to tell students about the agonizing scientific quest of scientists that led to quantum theory. What does the permutation of terms give? Starting with a supposedly unsolved problem, the teacher creates a problem situation in the classroom, forming in the minds of students the motive of mastering the boundary of scientific knowledge. Only motivation can become an effective factor in the active involvement of the individual in the process of cognition. Motives arise from needs, and needs are determined by experience, attitude, evaluation, will, emotion. Creative thinking requires solving the problem of inclusion. Reproductive mental processes associated with the reproduction of learned patterns in a problem situation are simply useless. Subject-object-subject relations contribute to the activation of creative thinking that arises from the collective solution of certain tasks. Some psychologists tend to divide motives into two groups. In both cases, the division occurs depending on

what underlies the motivation, the motivation. or the need for knowledge. The three groups of motives given below are related to traditional and active forms of learning, and therefore the authors consider it appropriate to offer the reader three-part classification. In traditional training, trainees form two groups of motivating motives:

I – directly motivating motives;

II – perspective motivating motives;

III - cognitive-motivating motives of selfless search for knowledge, truth. So, cognitive-motivating motivation appears when using active teaching methods and, having arisen, turns into a factor in activating the educational process and the effectiveness of learning. . Cognitive motivation encourages a person to develop his inclinations and capabilities, has a decisive influence on the formation of the personality and the disclosure of its creative potential.

With the advent of cognitive-motivating motives, there is a restructuring of perception, memory, thinking, reorientation of interests, activation of human abilities, creating the prerequisites for the successful implementation of that activity, which he is interested in. The inertia of traditional pedagogy is still very large and focuses mainly on the stimulation of motivating motives, on the motivation of achievement: to get high scores, successfully pass the session, etc. Therefore, the identification of psychological and pedagogical characteristics that contribute to the appearance of cognitive motivation with its subsequent transformation into professional motivation is one of the strategic directions of development of pedagogy of higher education and innovative teaching technologies. That is why the teacher should organize pedagogical and interpersonal communication in such a way and so direct the educational activities of students so that the motivation of achievement does not interfere with the emergence of cognitive motivation. The task of problem-based learning is the formation of motives. Its success is determined by the logic and content of the student's activity. The most important feature of the substantive aspect of problem-based learning is the reflection of objective contradictions that naturally arise in the process of scientific cognition, educational or any other. As a result, problem-based learning can be called developmental, because its purpose is the formation of knowledge, hypotheses, their development and solutions. To formulate a problem correctly is to solve it halfway. But at the initial stage of the solution, the

formulation of such a problem does not contain the key to its solution. Although the teacher knows from the very beginning the shortest way to solving the problem, his task is to orient the search process itself, step by step leading students to solve the problem and obtaining new knowledge. Some authors define problem-based learning as a series of problem-based tasks, the consistent solution of which leads to the achievement of the set didactic goal

As a result of research and practical Three main conditions for the success of problem-based learning have been identified: – ensuring sufficient motivation that can arouse interest in the content of the problem; – ensuring the feasibility of working with the problems arising at each stage (a rational ratio of the known and the unknown); – the significance of the information obtained in solving the problem for the learner. So, the main psychological and pedagogical goal of problem-based learning - the development of professional problem thinking - in each specific activity has its own specifics. In general, the development of creative abilities is of an applied nature and is concretized in relation to the subject, transforming into the formation of a particular creative ability, in non-standard vision: – to see the problem in a trivial situation, when students have non-trivial questions for a given level of training such as: "Is everyone can the curve be set by a system of two equations?"; – to see in a new way the structure of a trivial object (its new elements, their connections and functions, etc.), for example, the coinciding outlines of the continents of the Americas, Europe and Africa; – to form the ability to transfer previously acquired knowledge and skills to a new situation (formation of meta-minds); – combine a new way of solving from elements of previously known methods. For example, the transfer of methods of chemical, psychological, graphological, mathematical analysis to forensic examination; – to build original solutions without using previously known similar methods (this is how Lobachevsky's non-Euclidean geometry, Einstein's theory of relativity, quantum physics were created Planck).

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