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# ВЗАИМОСВЯЗЬ МЕЖДУ АКТИВАЦИЕЙ ПОЗНАВАТЕЛЬНОЙ ДЕЯТЕЛЬНОСТИ СТУДЕНТОВ И ПРОБЛЕМНЫМ ОБУЧЕНИЕМ

#### Аннотация

В данной статье происходит образование о проблемном обучении на уроках и их влиянии на мыслительные способности учащихся.

**Ключевые слова:** деятельность, метод, антипод, эмпирический материал, мысленный поиск, концепт, ситуация, усвоение.

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# THE RELATIONSHIP BETWEEN THE ACTIVATION OF COGNITIVE ACTIVITY OF STUDENTS AND PROBLEM-BASED LEARNING

### **Annotation**

In this article there is an formation about the problem based learning in the classroom and their effect of students thinking abilities.

**Key words:** activity, method, antipode, empirical materials, mental search, concept, situation, assimilation.

Some teachers equate these two concepts, suggesting that the very term "problem learning" be eliminated. Problem-based learning is one of the most effective means of activating the student's thinking. The essence of the activity achieved in problem-based learning is that the student must analyze the factual material and operate on it in such a way as to obtain new information from it. In other words, this is an expansion, deepening of knowledge with the help of previously acquired knowledge or a new application of previous knowledge. Neither a teacher

nor a book can give a new application of previous knowledge; it is sought and found by the student, placed in the appropriate situation. This is the search method of teaching as an antipode to the method of perceiving ready-made conclusions of the teacher (although the latter method also causes a certain activity of the student).

The mental search is a complex process. Not every search is associated with a problem. If the teacher gives the task to the students and indicates how to do it, then even their independent search will not be a solution to the problem. Students can take an active part in research work, collecting empirical material, but not solving any problems. Genuine activation of students is characterized by an independent search for solutions to problems.

The purpose of activating students through problem-based learning is to raise the level of the student's mental activity and teach him not to separate operations in a random, spontaneous order, but to a system of mental actions that is typical for solving non-stereotypical tasks that require the use of creative mental activity.

The essence of activating the student's teaching through problem-based learning is to activate his thinking by creating problem situations, in the formation of cognitive interest and modeling of mental processes.

The problem situation and the learning problem are the basic concepts of problembased learning, which is seen not as a mechanical addition of the activities of teaching and learning, but as a dialectical interaction and interconnection of these two activities.

Problem teaching is defined as the activity of a teacher in creating a system of problem situations, presenting educational material with its (full or partial) explanation and managing the activities of students aimed at mastering new knowledge - both in the traditional way and through self-preparation of educational problems and their solution.

Problem learning is an educational and cognitive activity of students in assimilating knowledge and methods of activity by perceiving the teacher's explanations in a problem situation, independently (or with the help of a teacher) analyzing problem situations, formulating problems and solving them by putting

forward proposals, hypotheses, their justification and proof, as well as by checking the correctness of the solution.

A. M. Matyushkin characterizes a problem situation as "a special type of mental interaction between an object and a subject, characterized by such a mental state of the subject (student) in solving problems that requires the discovery (discovery or assimilation) of new knowledge or methods of activity previously unknown to the subject"1. In other words, a problem situation is a situation in which the subject wants to solve some difficult tasks for himself, but he does not have enough data and he must look for them himself.

Problem situations can be subdivided on several grounds: by the field of scientific knowledge or academic discipline (Russian language, mathematics, etc.); by focusing on finding the missing new (new knowledge, methods of action, identifying the possibility of applying known knowledge and methods in new conditions); by the level of problematicity (very sharp contradictions, medium sharpness, weakly or implicitly expressed contradictions); according to the type and nature of the content side of the contradictions (for example, between worldly ideas and scientific knowledge, an unexpected fact and the inability to explain it, etc.).

Didactically and methodically based ways of creating problem situations can be found only if the teacher knows the general patterns of their occurrence. In the literature on problem-based learning, there are attempts to formulate these patterns in the form of types of problem situations.

Sum up, studies have shown that it is possible to single out the most characteristic types of problem situations for pedagogical practice, common to all subjects.

- 1. It should be considered the most general and widespread: a problem situation arises if the student does not know how to solve the problem, they cannot answer the problematic question, give an explanation for a new fact in an educational or life situation, that is, if students realize the insufficiency of the previous knowledge to explain a new fact.
- 2. Problem situations arise when students encounter the need to use previously acquired knowledge in new practical conditions. As a rule, teachers organize these

conditions not only so that students can apply their knowledge in practice, but also face the fact of their insufficiency. Awareness of this fact by students arouses cognitive interest and stimulates the search for new knowledge.

- 3. A problematic situation easily arises if there is a contradiction between the theoretically possible way of solving the problem and the practical impracticability of the chosen method.
- 4. A problematic situation arises when there is a contradiction between the practically achieved result of completing a learning task and the students' lack of knowledge for its theoretical justification.

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