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AIMS OF PROBLEM BASED-LEARNING IN TEACHING FUTURE SPECIALISTS

The given article considers the questions of methods of teaching a foreign language, particularly, one of the varieties of innovative methods of teaching as problem-based learning, which is aimed at forming self-directed independent students. This method of teaching meets the present-day requirements as teaching by researching as well as researching by teaching. With the help of this method we can develop a creative personality, thus, perform the main pedagogic task. Today graduates need to be self-directed and possess lifelong learning skills. Problem-based learning involve not only active learning but also the formulation and solution of new, non-standard and original tasks. They need to be critical thinkers, problem solvers and analytical in their approach. It means that learners need to be able to integrate knowledge and skills from a number of disciplines as well as have the interpersonal skills to be an effective team member.

Key words: problem-based learning, teaching methods, problem tasks, problem assignments, creative thinking, cognitive abilities.

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Болашақ мамандарды оқытудағы проблемалық бағдарланған оқытудың мақсаты

Берілген мақалада шет тілін оқытуда қолданылатын әдістер туралы, нақты айтқанда, инновациялық оқытудың проблемалық оқыту әдісі талқыланады. Проблемалық оқыту әдісі студенттердің өзіндік жұмыс жасау қабілетін дамытуға бағытталған. Зерттеу арқылы оқыту және оқыту арқылы зерттеу негізінде бұл оқыту түрі қазіргі күн талабына сай келеді. Тек соның негізінде шығармашылық тұлға қалыптастыра алады, сөйтіп, басты педагогикалық міндет орындай алады. Бүгінгі түлектер өзін-өзі басқару және үздіксіз оқу дағдыларына ие болуы керек. Проблемалық оқыту тек қана белсенді оқуды ғана емес, сонымен қатар жаңа, стандартты емес және түпнұсқалы тапсырмаларды шешуді талап етеді. Олар аналитикалық әдісті пайдалана отырып, критикалық ойлау мен проблемаларды шешуі қажет. Бұл өз кезегінде, студенттердің бірқатар пәндерден алған білімдері мен дағдыларын біріктіру мүмкіндігі болуы керек, сондай-ақ тиімді команда мүшесі болу үшін тұлғааралық дағдыға ие болуы тиіс.

Түйін сөздер: проблемалық оқыту, оқыту әдістері, проблемалық тапсырмалар, шығармашылық ойлау, танымдық қабілеттерін арттыру.

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Цель проблемно-ориентированного обучения будущих специалистов

В данной статье обсуждаются вопросы методики преподавания иностранного языка, в частности, одной из разновидностей инновационной методики, как проблемное обучение,

которое направлено на развитие самостоятельности студентов. Этот метод обучения отвечает требованиям дня: обучать, исследуя, и исследовать, обучая. Только так можно формировать творческую личность, таким образом, выполняя основную педагогическую задачу. Сегодня выпускники должны быть самостоятельными и обладать навыками непрерывного обучения. Проблемное обучение предполагает не только активное обучение, но и формулирование и решение новых, нестандартных и оригинальных задач. Они должны мыслить критически, решать проблемы, используя аналитический подход. Это означает, что учащиеся должны иметь возможность интегрировать знания и навыки из ряда дисциплин, а также иметь навыки межличностного общения, чтобы быть эффективным членом команды.

Ключевые слова: проблемное обучение, методы обучения, проблемные задачи, проблемные задания, творческое мышление, познавательные способности.

«Too often we give learners answers to remember,
rather than problems to solve.»
Roger Lewin

Introduction

Modern education reforms and real realities of life put before the high school a new task – education of an independently thinking and socially active specialist who is capable of self-education and self-improvement. In the traditional pedagogical approaches of learning, we often use reproductive methods, which involve active perception and memorization by students of educational information reported by the instructor or another source. They are particularly effective when the content of the study material is mainly informative and present a description of methods of practical actions that are very complex or fundamentally new in order to allow students to carry out independent search of knowledge.

Traditional reproductive methods of teaching often follow a linear process where the instructor dictates what is to be done: information and details are presented first which the students then use to solve a problem. However, reproductive methods do not allow developing the thinking of students to a proper extent, and especially independence and flexibility of thinking, to form students skills and search activities. Moreover, the excessive use of these techniques lead to the formalization of the process of learning knowledge, and sometimes just cramming. Students cannot develop the abilities and skills of independent scientific research, because they are provided the finished results for their assimilation. The «consumption» of ready-made scientific achievements cannot form a model of future real activity in the minds of students.

The important thing for optimizing the learning process in the University is improving the organization of independent work, providing methodological assistance and supervision.

Forming the skills of independent work allows learners to improve previously acquired knowledge and skills so that future specialists can study sources in a foreign language in the course of their professional work, search for information, logically comprehend the information extracted, and use various types of reading. It is necessary to give the learning process characteristic features of the process of communication. Work in the classroom should simulate the conditions of real language communication as accurately as possible. The content of training should meet the interests and needs of students, appeal to personal experience, to their feelings and emotions, to encourage comparison and contribute to the development of critical thinking.

To solve it, we need to improve forms and means of teaching a foreign language, to apply methods of problem-based learning (PBL) and the development of thinking and abilities of students. In this view, PBL contributes to the effective development of intellectual sphere of the learners and aims at developing creative abilities of students, their educational and scientific-search activity.

The emergence of PBL as a teaching methodology and educational project is associated with the Medical University of McMaster (Canada, September 1969).

Problems based on actual clinical cases were the main points in medical program. Based on the educational process, the medical curriculum shifted from the approach of focusing on the faculty to the approach focused on the student, as well as an interdisciplinary approach.

Exactly the same PBL curricula were introduced in new medical schools at the university Maastricht and the University of Newcastle. In the 1980s, the University of New Mexico created an alternative PBL plan for a small group of students. Harvard Medical School accepted the New Ways in teaching the PBL program for all its students. Since then, PBL has spread from medical disciplines to other

disciplines such as architecture, business, economics, education, music, law, optometry, political science, social work and others.

What is the essence of PBL? In its most general form it consists in the fact that the learners have a problem task and they must find the way to solve this problem by relying on the knowledge and skills they have mastered previously. The task posed to students needs to contain a contradiction, the resolution of which gives them new knowledge. Overcoming difficulties in the course of solving a problem task requires the mobilization of cognitive activity and mental processes, including elements of creative thinking-verbal activities. Solving problems provides not only the mastery of new knowledge, but also the mental development of students, especially their creative abilities.

Experiment

The use of these methods in foreign language classes allows developing such skills of students as:

- ability to conduct a discussion on a given topic;
- ability to hear and to listen to the partner;
- ability to defend their point of view and support with arguments;
- ability to find a compromise;
- ability to find solutions to the problem.

PBL is a method of learning and teaching, which allows students to focus on how and what they will learn. The instructor or tutor presents the students an unfamiliar problem, situation or task and they are required to determine for themselves how they will go about solving the problem. Usually they work in small groups, which allow them to utilize their prior knowledge in the topic area and identify the gaps in their knowledge as they attempt to solve the problem. In PBL, students learn by solving challenging, open-ended problems. They rely on their current knowledge of the problem, identify information they need to know and strategies to use. (<http://www.flinders.edu.au/teaching/quality/teaching-methods/problem-based-learning.cfm>)

The peculiarity of PBL is a creative atmosphere of discussion and freedom of discussion: both the instructor and students must show a positive attitude to participation in the analysis of the problem, promotion, discussion of the hypotheses and the formation of new problems. The essence of the problem of interpretation of educational material is that the instructor does not give knowledge in a ready-made form, but confronts the students with

problem tasks, prompting them to look for the ways and means to solve them.

PBL is a student-centered approach to learning that encourages students to be self-directed, interdependent and independent as they attempt to solve the set problem. PBL is a method of teaching, in which students acquire knowledge not by learning and memorizing, but in the result of mental work on the solution of problems and the problem tasks built on the content of the material being studied. It is used both at the stage of introduction of educational material and at the stage of its consolidation in the process of speech practice at different stages of learning.

We can define four problem-search methods of PBL that are used in the course of learning: problem questions, problem tasks, problem assignments and problem situations.

A problem question is a question to which the students do not have a ready answer in advance; they have to look for the answer on their own. Unlike the conventional question, a problem question does not involve simple recall and reproduction of knowledge.

A problem task is a large educational and cognitive task requiring analysis and finding ways and methods of its solution. It is a form of organization of educational material with pre-defined conditions and unknown data. The search for these data involves students in active mental activity, analysis of facts, the explanation of reasons of the origin of objects and cause-and-effect relationships. The solution of such a problem may be in the form of verbal reasoning or search laboratory work.

A problem assignment gives the instructions that are offered to students for their independent search and cognitive activities. They are aimed at obtaining the required result and can be performed in the form of research, writing, invention, experiment, modeling, etc.

A problem situation is a state of mental difficulties of students caused by the failure of their previously learned knowledge and ways of working to solve cognitive tasks, assignments or educational problems. It is specially created by the teacher with the help of certain methods and tools. In general, it can be argued that the problem situation arises when you know the goal, but you do not know the way to achieve it. (<https://shkolazhizni.ru/school/articles/42552/>)

In PBL, student learning centers on a complex problem that does not have a single correct answer. Students work in collaborative groups to identify what they need to learn in order to solve a problem.

They engage in self-directed learning and then apply their new knowledge to the problem and reflect on what they learned and the effectiveness of the strategies employed. The instructor acts to facilitate the learning process rather than to provide knowledge. (<http://www.queensu.ca/ctl/what-we-do/teaching-and-assessment-strategies/problem-based-learning>)

Elements of PBL motivate students to search for information independently, and to activate thinking, which means making knowledge personally significant. They allow them to learn to see the problem on their own, to formulate it, to find solutions and solve it. This kind of learning is focused on the formation and development of abilities for creative activity and the need for it, that is, it is more intense than reproductive learning, but also affects the development of creative thinking of students.

There are several substantive features of problem-based learning. Let us analyze some:

- The different types of contradictions identified by the instructor together with students. For example, the contradiction between the theoretical model and the experimental data.

- Lack of known ways to solve such problems.
- Deficiency of data or theoretical models.

The instructor engaged in problem training needs to know the structure and typology of problem situations, the methods for their resolution, pedagogical techniques that determine the tactics of the problem approach. Examples of problem situations, based on the contradictions that are typical for the cognitive process, can serve:

- Problem situation as a result of contradictions between school knowledge and new facts for students that destroy the theory.

- Understanding the scientific importance of the problem and the lack of a theoretical basis for its solution.

- Diversity of the concept and the lack of a reliable theory that can explain these facts.

- Practically accessible result and lack of theoretical justification.

- The contradiction between the theoretically possible solution and its practical impracticality.

- A contradiction between a large number of actual data and the absence of a method for their processing and analysis. All these contradictions arise from an imbalance between theoretical and practical information, an excess of one and a disadvantage of the other, or vice versa. (<http://scicenter.online/psihologiya-pedagogika-scicenter/problemnoe-obuchenie-vuze-50830.html>)

Results and discussion

PBL involves the consistent and targeted involvement of students in solving educational problems, as well as problem cognitive tasks, in the course of which they must actively learn new knowledge, acquire skills and abilities in independent formation of the problem based on real conditions.

The formation of professional thinking of students is the development of a creative, problem-based approach. University training should form creative abilities necessary for the future specialist:

- to think critically;
- to analyze and solve complex, real-world problems;
- to find, evaluate, and use appropriate learning resources;
- to collect and analyze data, to suggest methods for their processing;
- to formulate conclusions and see the possibilities of applying the results;
- to see the problem as a whole, all aspects and stages, all solutions;
- to demonstrate effective communication skills;
- to use content knowledge and intellectual skills to become continual learners;
- to work cooperatively; to determine the extent of personal involvement in solving the problem.

The advantages of PBL is, first of all, great opportunities for the development of attention, observation, activation of thinking, enhancement of students' cognitive activity: it develops independence, responsibility, criticality and self-criticism, initiative, originality of thought and determination. Students learn to become partners in teaching process because they accept responsibility for their learning, deal with new and changing situations and work successfully as team members. The techniques of PBL help students to analyze and solve real world problems and prepare them for their future careers.

Conclusion

PBL is in the stream of a constructivist studying the genre, because it is believed to be compatible with constructivism, although its theoretical roots stem from different theories of learning, including cognitive and humanistic theories, and based on learning through experience. For the purposes of this module, we will concentrate our discussion of constructivism as the main theoretical basis of PBL.

What does constructivism mean? The term refers to the theory of learning that human knowledge received by people within social communities, are based on previous knowledge of the trainee. A student is seen as an active participant in training instead of a passive recipient of knowledge.

According to constructivists, understanding comes from interacting with the environment, as a result cognitive conflict that stimulates learning, and knowledge is formed when students overcome difficulties in social situations and acquire an individual understanding.

Unlike the objectivist approach, where students are instructed to try to execute tasks and exercises to understand and apply knowledge, the approach developed in PBL begins with a problem, submitted to a student who will work with others in the group to discuss the problem and to determine what needs to be learned or what research is required to carry out tasks, specified in the problem scenario.

Students participating in PBL have the opportunity to form their own understanding of the solution problems, compare it with peer decisions

and improve their own decision, because they gain experience in the process of solving the problem. The formation of knowledge occurs when students study problems, take positions, discuss ideas, reflect and re-evaluate their positions, and finally come to a synthesized or generated result.

Thus, today graduates need to be self-directed and possess lifelong learning skills. PBL ensures the durability of the acquired knowledge, because they are produced in independent activities. These methods of learning involve not only active learning but also the formulation and solution of new, non-standard and original tasks. They need to be critical thinkers, problem solvers and analytical in their approach. It means that learners need to be able to integrate knowledge and skills from a number of disciplines as well as have the interpersonal skills to be an effective team member. (<https://link.springer.com/article/10.1023/B:EDPR.0000034022.16470.f3>) Thus, PBL contributes to the formation and manifestation of creative abilities of students. It is this goal that we should strive in organizing and conducting classes using the methods of PBL.

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