



MODERN EDUCATIONAL METHODS ARE ONE OF THE MEANS OF INCREASING THE EFFICIENCY OF THE EDUCATIONAL PROCESS

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Annotation:

The article discusses the possibilities of developing and applying various teaching methods to prepare students of technical universities for innovative engineering activities. Prospects of using active and interactive methods in creating conditions for the development of active cognitive activity of students have been proven.

Keywords: The effectiveness of the educational process, the formation of motivation, passive, active and interactive teaching methods, problem-based learning, programmed learning.

INTRODUCTION

The modern development of the economy determines the need of society and enterprises not only for highly qualified specialists who are competent in the profession, but also competent in innovative activities, possessing high-quality knowledge, able to independently solve not only professional production, but also scientific problems, ready for creative innovation, to continuous personal and professional development. Today, this very topical topic generates changes in the requirements for the training of university graduates, which means changes in the strategy and tactics of training.

Education is a purposeful communication of the subjects of the education system (teachers, students, infrastructure), implemented in accordance with the developed project, during which the study and implementation of the experience developed by mankind and the development of one's own experience of activity are carried out. The learning process is aimed at the formation of professional competence through the awareness and use of motivation for learning activities, the use of natural and the development of acquired specific abilities, and the development of competencies based on knowledge, skills and abilities.





RESEARCH MATERIALS AND METHODOLOGY

The main characteristics of a graduate are his competence in the profession, in innovation. Therefore, the emphasis in the modern learning process is shifted from predominantly informative communication between the two subjects of the "teacher-student" learning system to the process of cognition itself and methods of transferring knowledge into activity. The effectiveness of this process depends on many components included in the system, but the focus is on the student and his cognitive activity. The formation of motivation, the activation of creative thinking, the ability to extract, analyze and use information to solve problems, generate ideas and manage the results of intellectual activity, quickly adapt to changing conditions are the tasks of modern education and they can be solved only through a creative approach to organizing the educational process, a combination of traditional and new teaching methods, which acts as a guarantor of the effectiveness of the pedagogical process. Depending on the selected goal and the formulated tasks on the topic under study, teaching methods are selected. Pedagogical technology as a set of means and methods for reproducing the process of education and upbringing is designed on the basis of new ideas, modeled depending on the identified goal and formulated learning objectives, and is implemented by the teacher, taking into account the time factor - the number of hours allocated for studying the discipline, the conditions and teaching aids used, the subject being studied, the significance of the educational material for the student's further professional or current educational activities. At the same time, teaching methods often become new pedagogical ideas.

The teaching methods used by modern teachers can be classified into three types: passive, active and interactive - each with its own characteristics, conditions and situations for application.

Passive methods are a traditional narrative way of conveying by the teacher the information necessary for the formation of knowledge on a certain topic. In this interaction between the teacher and the students, the teacher dominates and, using his abilities as a lecturer, conveys the content of the lecture to the audience, using their reproductive abilities to listen, perceive, take notes, reproduce, i.e. passively. Surveys, independent and control work, closed tests serve, as a rule, as diagnostic tools when using such methods. With the existence of a huge amount of information in the modern world, it seems impossible for teachers to convey it and students to study it all. And from this point of view, such methods are ineffective. But if the lessons are devoted to familiarization, for example, with the terms and definitions necessary for understanding the subsequent material, their use is justified today. In addition, they





are attractive from the point of view of the possibility of conveying to students a large amount of educational material at once.

Active and interactive teaching methods, unlike the previous group of methods, which involve a smooth detailed presentation of the material by the teacher, involve the active participation of students in the process of acquiring knowledge, skills, skills based on information found by the students themselves at the suggestion of the teacher, that is, their conscious assimilation. Therefore, the activity of students is their intensive educational activity, and teachers - intensive pedagogical activity. Both subjects of education - both the teacher and the student himself - are interested in the development of the student's cognitive activity (independent creative thinking, the desire to gain knowledge and conduct an active information search in connection with this, finding their own approaches to solving problems, being critical of their own and other people's decisions, and so on.) as a tool of educational activity.

Interactive ("inter" is mutual, "act" is to act) means to interact, to be in a conversation mode, a dialogue with someone. An interactive approach is a certain type of student activity associated with the study of educational material during an interactive lesson. The backbone of interactive approaches are interactive exercises and tasks that are performed by students.

Interactive methods are focused on enhancing the educational and cognitive activity of students through dialogue interaction with the teacher, among themselves, with the computer. Any participant in the learning process has the opportunity to intervene in the course of solving problems, tasks and receive the necessary explanations and assistance, training and practice. In the dialogue mode, the process of solving the problem can be controlled not only by the teacher. The use of such methods involves feedback, bidirectional action: question - request - answer. The use of such teaching methods allows students to discover their potential abilities and develop the missing specific abilities and, as a result, skills and abilities. In the process of dialogue, they learn to listen and hear, analyze the statements of others, form and formulate their opinions, make decisions and analyze them, develop communication skills, discover, understand and use natural abilities (creator, critic, performer). The teacher, students, computers act as equal participants in the interactive learning process. Of course, this natural dialogue is preceded by a lot of work by the teacher in choosing the problematic topics of the content of training, developing a plan for conducting the lesson, tasks, choosing methods for diagnosing results, and so on. At the same time, he must be prepared for some spontaneity in the course of reasoning, depending on the potential abilities, students and the degree of formation of motivation for learning. Nevertheless, it is these methods that make it possible to create conditions for





students to demonstrate their abilities, form motivation for creative research educational activities, obtain information for transforming it into knowledge, skills, skills necessary for developing competencies necessary for solving professional, social and other problems.

RESEARCH RESULTS

The use of active and interactive teaching methods, on the one hand, “complicates life” for the teacher, since, firstly, he himself must become more active, spending additional time and energy on preparing classes, actively conduct them, formulating actual problems that correspond to the topic being studied, setting the direction their analysis and resolution, using ways to activate creative thinking, while forming cognitive motivation among students. Students, for their part, take part in the formation of this motivation in the process of finding the necessary information to solve the problem posed by the teacher, feeling the need, experiencing interest, understanding the motive of learning activities.

Taking into account all the indicated factors, various technologies of active learning are used - developing, problematic, research, search and others, involving the use of active and interactive methods focused on the formation and manifestation of internal means for learning activities by students (abilities, need, interest, motive), and the methods and technologies themselves, creating a favorable environment for learning, act as an external tool (stimulus).

Let's look at some teaching methods.

Problem-based learning, when new knowledge is acquired by a student through an attempt to resolve a problematic issue, task or situation. At the same time, the process of cognition of students in cooperation and dialogue with the teacher is approaching research activity. The content of the problem is revealed by organizing the search for its solution or summarizing and analyzing traditional and modern points of view.

The task of the teacher at the beginning and during the presentation of educational material is to create and formulate problem situations, to involve students in their analysis and resolution. At the same time, they can independently come to the conclusions that the teacher should have reported, provided that the previous knowledge is sufficient. The teacher should guide students to find the right solution to the problem, for example, by suggesting certain sources of necessary information. The problematic lecture stimulates the process of cognition of students, giving it a search character, which forms creative abilities.

The project method is based on the development of cognitive, creative skills, students and critical thinking, the ability to independently construct their knowledge, navigate





the information space. Speaking about the method of projects, one should keep in mind the way to achieve the didactic goal through a detailed development of the problem, which should end with a very real, tangible practical result, formalized in one way or another. The project method is based on the idea of interaction and cooperation between students in the course of the educational process, it creates conditions for the development of various necessary qualities in them both as an autonomous and as a socially active person, able to interact in a study group and take responsibility both personally and for the study group. This creates conditions for the socialization of the individual, develops his professional and business activity. It is these qualities that students need to become qualified professionals. Those social roles that students accept and perform in the course of working on projects (organizer, leader, performer, etc.) accustom and prepare them to perform and solve complex problematic professional tasks in situations of real interaction.

The method of modeling specific situations allows you to discuss professional, social, innovative, legal and other problems. It actively acts on the formation of motivation for a specific activity, including motivation for search activity, in the process of which the necessary information is found that allows solving a problem situation. In the process of modeling, the problem is identified, its participants, the connections between them, the goal that must be achieved by solving the problem, the problem is modeled and solved by using the knowledge available and transformed from the newly found information. Analysis of the solutions obtained, the choice of the best in the process of general discussion, its competent presentation, description and application to solve similar situations form professional skills.

Role-playing games are one of the active learning methods that are creative and therefore productive. The application of the method stimulates cognitive interests, search activity, forms motivation for educational activities and for professional and innovative motivation. The game, as one of the types of human activity, removes psychological inertia from students, adjusts to the positive nature of interaction.

Working on game tasks, students have the opportunity to understand their role in the business game, assessing their abilities (creative, performing, critical). Also, this method allows you to check the degree of ability to transfer knowledge into activities. Creating an environment during the game that is close to the real conditions of professional activity allows you to learn how to independently identify problems, analyze them, formulate tasks, find possible methods for solving them, and correctly manage the results of intellectual activity.

The dilemmadecision method (solution and dilemma) involves the active actions of students to analyze and resolve the situation of uncertainty that has developed in the





company, of which they are allegedly employees. Transferring knowledge from the natural, general technical, special sciences and applying methods for activating creative thinking (system analysis, brainstorming, etc.), students, each from the position of their position, offer a solution to a problem situation. Then they are invited to familiarize themselves with a real-life solution and compare one and the other. The method helps to increase motivation for learning, as it allows you to immerse yourself in real professional problem situations, to realize yourself as an accomplice in their resolution.

"Round table" can be considered an interactive teaching method that allows you to activate the cognitive activity of students, use previously acquired knowledge and fill in the missing information to form the knowledge necessary in the situation under consideration, form competencies aimed at identifying, analyzing and solving problems, learn the culture of discussion. The round table discussion is a combination of thematic discussion with group consultation and peer learning. Along with the active exchange of knowledge, students develop communication skills, including the ability to interact with other participants, express their thoughts, argue and justify the proposed solutions. One of the conditions for organizing a "round table" is to provide an opportunity for participants to see each other, to respond to facial expressions, gestures, and emotions. This adds color to the communication process, creates a creative mood and the possibility of actively including each participant in the discussion of the problem.

Programmed learning has made a significant contribution to the development of approaches to the individualization of learning based on specially designed training courses for individual use, which received a new impetus in connection with the development of computer technology and distance learning. This includes such methods as "brainstorming", "control questions method", "I - you - we" method, "learning through learning", "puzzle method" and others that activate students' learning activities.

"Passive" teaching methods contribute to the development of predominantly reproductive abilities. Active and interactive to a greater extent contribute to the development of students' thinking, search and research abilities, involve them in solving problems that are as close as possible to real production situations, expand and deepen professional knowledge, practical skills and abilities based on the use of knowledge, form motivation for innovation. By demonstrating and developing their abilities and personal qualities, understanding the importance of self-education and self-education, students become active participants in the educational process, capable of self-esteem and self-organization.





We believe that the difference between active and interactive teaching methods is that the use of the first involves creating a situation where a dialogue takes place in a pair of "teacher-student", and in the second case, the possible interaction is wider: "teacher-student", "student- student", "student-computer". In addition, in the first case, problem situations are created by the teacher, and in interactive interaction, students not only solve educational problems, but often identify problems themselves, choose methods and means to solve them, and solve them.

CONCLUSION

It can be unequivocally stated that the innovative activity of teachers in the search, development and implementation of new methods and teaching aids that activate the creative thinking of students is a modern and promising trend in the development of education. All the teaching methods considered in the article (as well as many others) are used by teachers of the Fergana branch of the Tashkent University of Information Technologies named after Muhammad al-Khwarizmi. The passage of teaching practice at this branch allows students to analyze the activities of teachers, gain their own experience in using some teaching methods. We see the possibility of creating new teaching methods that activate the learning activities of students based on the generation of new pedagogical ideas and the integrated use of the ideas of other authors.

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