



## APPLYING INNOVATIVE TECHNOLOGIES IN THE EDUCATIONAL PROCESS

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### ABSTRACT

*This article presents the review of applying innovative technologies in the educational process. As a result of the research conducted in Ferghana Polytechnic Institute, the authors make an argumentative conclusion about the need to change the system and style of teaching, suggests the use of innovative methods to address these issues in modern higher education. The article presents the types and advantages of interactive methods as one of the forms of innovative learning.*

**KEY WORDS:** *interactive methods, discussion, discipline, methods, aims, tasks, forms of education, technological map, technology of learning, transformation process, training.*

### INTRODUCTION

In Uzbekistan a great attention is paid to the problems of education. Annually about 53% of the state budget is allocated to the improvement of the system of education in the country. The main objective of the driving force of the transformation process is the human being, his or her harmonic development and well-being, and the creation of conditions for the effective mechanisms of realization and identity. An important condition for the development of Uzbekistan is the formation of an advanced system of training and education on the basis of the rich intellectual heritage of nature and human values, achievements of modern culture, economy, science and technology. [3]. The Education Act and article 14 on a higher education in Uzbekistan state that a higher education provides for the training of highly qualified specialists. The training of specialists with higher education is provided in higher educational institutions (universities, academies, institutes and others) on the basis of specialized secondary and vocational education.

At the present time in the system of a higher education there is a search and development of innovative teaching technologies which aims, first of all, at the development of analytical and creative abilities of the individual [10]. This creates the most favorable conditions for connecting the educational

process with the research work of students. The following requirements are imposed to the technologies of innovative education: dialogical and activity-creative character, aimed at supporting the individual development of the student, providing the necessary space for the student to make independent decisions, choosing the content and methods of teaching and behavior [2]. The priority forms of modern technologies in the educational process are technologic and creative.

The effectiveness of their use presupposes the existence of a certain system of pedagogical actions in the construction of the classroom space. The educational activity acquires a creative innovative character, develops independence and activity of students. The obligatory condition is the teacher's motivation of students' creativity [5].

Traditional methods imply communication between the teacher and the student, constant control by the teacher over the educational activity of the student, control over the learning of the educational material. The fruitfulness of this dialogue depends on the correct solution of tasks:

- setting a learning goal and the resulting motivation for the student;
- transmission of material of certain content (lectures) and its interpretation for students (seminars);
- Knowledge control.



This model of education is of directive nature. Under the direct model, the result of training is considered to be the transfer of knowledge through the rational organization of the content of the educational process, when there is a one-sided dialogue, where the active side is the teacher [3].

On the basis of new information technologies and teaching methods it became possible to change the role of a teacher, to make him not only a carrier, but also a leader and initiator of independent creative work of a student [2]. In today's conditions of educational services market development and the requirements of the information technology era, teaching should combine directive and modern, innovative and interactive models of teaching developed by practice.

The interactive model of teaching is based on the introduction of innovative methods into the process of teaching: the method of problem presentation, pre - curricular presentation, discussions, case studies, group work, brainstorming, critical thinking, quizzes, mini research, business and role-playing, insert method (the method of individual notes when students write a 7-10 minute associative essay), blitz survey method, questionnaire method.

The process of information transfer is based on the principle of interaction between teacher and student [8]. It assumes greater activity of the student, his creative rethinking of the received information. The main criteria of the interactive learning model is: the possibility of informal discussion of the free presentation of material, a smaller number of lectures, but more seminars, the student's initiative, the presence of group tasks that require collective efforts, constant control during the semester, the performance of a written work. The priority principle of the higher educational system is the student's interests. In this regard, university lecturers are faced with the task of developing and implementing such methods and techniques of teaching as are aimed at activating the creative potential of students and their desire to learn [7].

The special place in innovative technology takes a seminar-training which purpose is acquisition of new experience of behaviour in conflict situations. The objectives of the training include the development of stress-resistant qualities of personality, the acquisition of skills of constructive behavior in conflict situations, the formation of reflexive thinking. Thus, training is an important methodological technique that makes it possible to build relationships between teachers and students in a constructive mode.

## OBJECTIVES

The research under discussion has been conducted among the students of Year 3 of Mechanical Engineering Faculty in Ferghana Polytechnic Institute in 2020. 100 students of three

different groups participated in the research. It was relevant to research the level of students' satisfaction with the educational process and teaching methods, as well as to identify the level of teachers' knowledge of innovative methods. The aim of the research is to form the principles of effective teaching at the technical university using interactive methods.

## METHODOLOGY AND RESULTS

In order to conduct the research to identify existing problems in the educational process "through the eyes" of students, the questionnaire "Student Satisfaction with the organization, forms and methods of education at the University" was developed, which was distributed among 100 students of three different groups of Mechanical Engineering Faculty of Ferghana Polytechnic Institute. Besides, to identify the level of professionalism of teachers in pedagogical activity, the questionnaire "Possession of teachers with innovative technologies and advanced pedagogical forms and methods of training in higher educational institution" has been developed. The survey was attended by 20 teachers working in different scientific directions.

Most students see the main problems in the educational process as teachers' little interest in interesting and qualitative presentation of educational material, lack of innovative methods in teaching.

Also, when asked whether students are satisfied with the methods of teaching academic disciplines (lectures), most of them answered that they are not very satisfied. 60 % of students are not satisfied with the methods of teaching, as in almost 40 % of cases passive methods of traditional teaching are used in their classes, while all respondents consider interactive and active forms of interaction between teacher and students to be the most effective in teaching.

Students consider the most effective ways of conducting classes to be practical classes of innovative type (debates, trainings, game situations, role-playing, etc.), creative tasks (independent research, essays), round table method, i.e. interactive methods. In most cases, as follows from the survey results, monologue lectures or traditional classes are used, where students play a passive role.

The success of students depends on the ability of the teacher to motivate students to study and work independently. Most of the teachers surveyed rated their level of ability to motivate students to learn as average. When asked what forms of teacher-student interaction in their opinion are the most effective in learning, 95% of teachers answered active or interactive, but 19.4% of them use passive methods of working with students, i.e. lectures-monologues and traditional classes, 66% use active methods and only 14.6% - interactive. Also, when assessing teachers' own level of mastery of innovative



technologies and advanced pedagogical methods, the majority answered as average or sufficient.

The survey results show, both students and teachers are ready to use innovative methods in their practice, which leads to systematization of interactive methods in education and description of forms of their use in practice.

## SUGGESTIONS

There are various interactive forms in education [6]:

- the round table method;
- disputes;
- brainstorming;
- business and role-playing games;
- case-study (case studies, situational analysis);
- Trainings, master classes.

Depending on the specific situation, the teacher chooses the most convenient forms of learning. When presenting teaching material in an interactive session, certain principles should be followed.

- The first principle: a lesson is not a monotonous lecture, but a common work and interaction of students with each other and the teacher.
- The second principle is that all students are equal, regardless of social status, age, experience, place of work, etc.
- The third principle: every student has the right to have his or her own opinion on any issue.
- The fourth principle: in no case should an individual be criticized, only the idea itself can be criticized.
- The fifth principle: everything said in the class is not a guide to action, but only information for reflection.

By following these principles, both the teacher and students will get the most out of the interactive lessons.

The peculiarities of the main part of the lesson, which is based on the method of round table, is that the use of this method allows to consolidate previously obtained knowledge, fill in the missing information, acquire the skills to solve existing problems, teach the culture of discussion. A characteristic feature of the round table is the combination of thematic discussion and group consultation.

The peculiarities of organizing a session using the round table method are that one or two problem situations on a given topic should be discussed in the course of the discussion; the opinions and statements expressed should be illustrated with the use of various visual materials (for example, diagrams, diagrams, graphs, audio and video

recordings); the main speakers should be carefully prepared on the topic (to express their opinion, prove and argue, not limited to one report).

The features of a discussion-based lesson are collective discussion of a certain issue, problem or comparison of information, ideas, opinions, suggestions, etc., the aim of which is to teach, diagnose, train, transform, change attitudes, stimulate creativity and so on. The effectiveness of discussions depends on the student's preparation for the proposed problem, their awareness and competence, and the degree of understanding of all terms, definitions and concepts. The correctness of the participants' behaviour as well as the teacher's ability to conduct the discussion is important.

Debates are a form of round table based on free expression and exchange of opinions on a given thematic thesis. The group of students is divided into two subgroups. A special feature of a debate is the result obtained, which should give an unambiguous answer to the question asked - yes or no. One subgroup is for positive answer(s) and the other subgroup is for negative answer(s). In the course of the debate, participants give examples, facts, logically prove, argue, explain, provide different information, etc.

Thus, debates contribute to the acquisition of skills to form and defend one's own position, strengthen speaker skills and ability to communicate with the audience, form team spirit and leadership skills, develop students' communication culture and public speaking skills. Equally important is the fact that the debate process builds research skills, as the arguments require proof and case studies that require work with literature and information sources. Debate also provides students with organizational skills, listening and recording skills.

Interactive methods help to establish emotional contacts between students, develop creativity, the ability to think outside the box and be able to defend their interests, form teamwork skills, providing high motivation in self-development and self-study, an active life position, disclosure of creative potential. Practice shows that the use of interactive methods in training, helps to reduce the nervous load of students, provides an opportunity to switch students' attention to key issues and topics of classes [1].

## CONCLUSION

The use of innovative methods, which include interactive forms of learning, is particularly important in training students in today's market needs.

It is difficult to overestimate the advantages of innovative methods, as they play a significant role in shaping the personal qualities of a future specialist. Innovative methods help students learn active ways to acquire new knowledge, allow them to master a higher level of social activity, also stimulate the



creativity of students and help bring their studies closer to the practice of everyday life.

The main feature of interactive methods in education is that students take initiative in the learning process, which is stimulated by the teacher as an assistant partner. The process and the result of obtaining knowledge acquire personal significance for each student, which makes it possible to develop the ability to solve a problem independently.

In order to implement innovative technologies in teaching, first of all, it is necessary to change established stereotypes and habits of lectures by teachers themselves, which is not facilitated by passive methods.

Besides, it is necessary to reorient the traditional approach to obtaining knowledge to work with students, which allows them to be actively involved in independent thinking, development of mental abilities, ability to analyze and draw conclusions.

For successful implementation of effective forms of education, a teacher needs to possess a comprehensive set of skills and knowledge based on the use of modern innovative methods of working with students [3].

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