

## **MAIN FEATURES OF METHODS OF TEACHING TECHNICAL SCIENCES**

**Abstract:** This article discusses current issues in the teaching of technical sciences. The author analyzes the main features of methods of teaching technical sciences.

**Key words:** technical sciences, method, interactive methods, inert, intense

The effectiveness of mastering technical disciplines by students of higher professional institutions largely depends on the teaching methodology. The concept of “methodology” from the ancient Greek language is translated as a way of research, theory, teaching. In the basic sense of the term, methodology is a branch of science in pedagogy, which studies the patterns of the educational process in a particular discipline. Methodology in the educational process describes certain methods and techniques of the teacher's activity.

Due to the rapid development of society, the constant updating and additions to the materials of technical disciplines, the learning process requires constant improvement. Therefore, it is necessary to train future specialists taking into account changes in teaching strategies and tactics.

Active teaching methods are the most successful methods for students to assimilate the information received. The essence of these methods is that the activity of the student is productive, creative and exploratory in nature. Active student is an active participant in the learning process. At the same time, the learning methods include didactic games, case analysis, problem solving, algorithm learning, brainstorming, out-of-context operations with concepts, and much more.

Each of the founders of active teaching methods gives his own classification of these methods in various directions. For example, S.V. Petrushin, according to the nature of educational and cognitive activity, divides active learning into simulation and non-imitation methods. The difference between these two methods lies in the fact that simulation methods are an imitation of the process of professional activity of an employee in a specific technical field, and non-simulation methods, in turn, do not use models of the process being studied during training.

The second direction of active learning methods according to S.V. Petrushin - classification according to the type of participants in the activity. The meaning of the methods lies in ranking according to certain features of objects or actions, designing objects, solving engineering and design problems.

One of the effective methods of teaching technical disciplines is the “round table” method. This method involves the study of the problems of professional activity through collective discussion. The main goal of the method is the application of theoretical skills in practice in an environment that models, for example, any technical process of manufacturing a product in an enterprise. Thanks to the "round table" method, the student develops the ability to think creatively and make decisions, acquires the ability to use knowledge professionally in the course of educational activities.

The “round table” method involves conducting training sessions in the form of various seminars and discussions.

The training seminar is a discussion of messages, the preparation of reports, the implementation of abstracts, the conduct of various kinds of scientific research. It should be noted that seminars are considered the most effective form of training engineering personnel in higher educational institutions.

Educational discussion is a method during which points of view are discussed and various kinds of problems are resolved. Today, this method is

recognized as one of the main forms of educational activities that contribute to the formation of reflective thinking. The result of the discussion, as a rule, can be some kind of general agreement, a new look at the problem, a proposal for a joint solution between students and teachers.

One of the effective methods of teaching technical disciplines is also a partial search method and a research method. According to these methods, the presentation of educational material occurs with the help of logical-semantic models and tasks. First, the teacher explains the algorithm for creating a model, then the students are given the task of compiling a similar model on the proposed topic. The student, working with the verbal representation of the educational material, acquires the skill of managing the course of mastering the knowledge gained in the learning process.

Conducting classes in accordance with the partially search and research methods develops technical thinking, which should be developed in students of technical specialties.

Thus, to date, a number of methods for teaching technical disciplines in a higher educational institution have been developed. The choice of a specific teaching method should be made in accordance with the complexity of mastering the material, the level of initial training of students in mastering a technical discipline. The teaching methodology should be thought out in all details on the organization and conduct of the educational process with the unconditional provision of comfortable conditions for both students and teachers.

The most important part of education is teaching students to think independently, accept and assimilate the material presented. The future of potential specialists in our country mainly depends on the self-study of students and the competence of teachers.

The teaching of special disciplines in higher educational institutions includes the study of the possibilities and methods of studying selected

disciplines at a professional level, the study of modern teaching methods and the possibility of obtaining available skills for their application, as well as the development of methods for the final control of students' knowledge, special disciplines. The learning process in higher educational institutions should encourage students (bachelors, specialists, masters, etc.) to use the acquired knowledge in practice and in solving the tasks assigned to them. Also, it is important for a teacher to correctly present the topics of his disciplines in a higher educational institution. The teacher must take into account the individual characteristics of students, their age, and the degree of workload.

The teaching method is a set of techniques and the ordering of the teacher's actions aimed at achieving the set learning goals. There are several main methods of teaching special disciplines in higher educational institutions, with an in-depth study of both humanitarian and technical specialties:

1. Inert - this method is used to teach students of any course and specialty. It is aimed at listening to lectures in the classroom, where students take a passive role of listeners and obey the directives of teachers, and the teacher, in turn, is an actor and manages the course of the lesson. This method of teaching, according to modern pedagogical technologies, is the most inefficient, but sometimes this method works well, for teachers with good experience, and when working with students who have clearly set goals aimed at in-depth study of the proposed disciplines

2. Intensive - a method where students are not passive listeners, but active participants in this lesson. In this type of lesson, the teacher and students are on an equal footing. Students can ask questions and have an active dialogue with the teacher.

A good teaching methodology ensures the unification of the interests of both the teacher and students, based on the combination of the need to study a special discipline with positive motivation for mastering this course. The effectiveness and quality of conducting a lesson on a subject is determined by

the professional talent and methodological skill of the teacher. He must be able in each specific case, from the whole variety of existing forms, methods and means of teaching, to select the most rational, taking into account the specific characteristics of the contingent of students, personal level of training, his practical experience.

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