

**Methodik zur Vorbereitung auf berufliche Tätigkeiten auf der Grundlage
moderner didaktischer Lehrmittel**

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Anmerkung: Der steigende Bedarf an arbeitsmarktfähigen Ingenieuren, das heißt, die in der Lage sind, nach der Ausbildung an Hochschulen in der realen Berufswelt tätig zu sein, erfordert die Suche nach neuen Formen ihrer Vorbereitung.

Schlüsselwörter: Wissen, Fähigkeiten, Qualifikationen, Bewertung, berufliche Entwicklung, interaktive Kommunikation, Bildung, Informationstechnologie, Abschluss.

Methodology for preparing students for professional activities based on modern
didactic means of teaching

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Abstract: an increase in the need for engineers who are competent in the labor market, that is, capable of operating in the real professional world after receiving education in higher educational institutions, necessitates the search for new forms of their preparation.

Keywords: knowledge, skills, qualifications, assessment, professional development, interactive communication, education, information technology, conclusion.

Introduction: Only some didactic principles characteristic of new information technologies were considered in the researches of I.V. Robert, N.V. Apatova and T.P. Voronina and others. I.V. Robert studied the principles of adaptability of information technologies to the individual capabilities of learners, interactive communication, as well as providing suggestive feedback (suggesting, giving advice). Higher educational institutions of technical direction 5320200 - application of information technologies in the teaching process of general professional sciences, including "Thermodynamics and heat engineering" in the field of mechanical engineering technology, equipment and automation of mechanical engineering production, teaching creating unique methods is one of the urgent problems that is waiting for its

solution today. The analysis of the results of the research carried out in this regard allows us to conclude that the effectiveness of the existing approaches to the assessment of the effectiveness and quality of studying the science of "Thermodynamics and Heat Engineering" is currently low. Because they are mainly focused on the assessment of knowledge, skills and abilities. Not enough attention is paid to the assessment of students' personal and professional development.

Main part: According to the state educational standard, students should have certain skills in calculating thermodynamic laws when studying the science of "Thermodynamics and heat engineering". After studying this subject, the student should: know the laws and methods of analysis of the science of thermodynamics and heat engineering and be able to use them rationally, have an idea about the important properties and characteristics of thermodynamics. The use of modern didactic teaching tools provides new highly effective teaching tools. Software tools provide intellectual support for students' actions, quick organization of actions using powerful computing tools with high accuracy. The traditional tasks of the science of "thermodynamics and heat engineering", that is, modeling, management and diagnosis of the studied processes and phenomena, will be the most understandable for students due to the use of information technologies in the educational process. During the development of the teaching methodology, a number of questions arise related to the specific features of teaching based on modern didactic means of teaching a specific subject. In the process of research, it was determined that it includes the tasks of forming a methodical system that includes goals, educational content, forms and methods of implementation. The goals of teaching the science of "thermodynamics and heat engineering" determine the following general directions of the entire system of training specialists for effective professional activity: improving the quality of knowledge in the subject; development of information competence of students; development of creative activity in the educational process; increasing students' interest in learning the general professional science of "Thermodynamics and heat engineering"; qualitative improvement of the professional level of graduates.

In connection with the introduction of modern didactic teaching tools into the process of teaching the general professional science of "Thermodynamics and Heat Engineering", the traditional didactic questions of why, how and what to teach are becoming more relevant than ever. The use of didactic possibilities of modern didactic tools in teaching the general professional science "Thermodynamics and heat engineering" has a significant impact on the following; that higher educational institutions are directed to the development of the personality of the future engineer; ensuring the compliance of the content of higher education with modern and predicted trends in the development of science, technology and production

(technology); technical direction to the optimal combination of group and individual forms of organization of the educational process in higher education institutions; to a rational combination of the traditional teaching system and information technologies at different stages of education; compliance of the results of the training of specialists with the requirements imposed by a certain field of their professional activity. The following didactic principles serve as a guiding basis for teaching the general professional science of "Thermodynamics and heat engineering": scientificity, convenience, demonstrability, consciousness, systematicity and consistency, unity of theory with practice. The scientific principle of teaching organized using modern didactic means of teaching implies a certain level of depth and need for the presentation of educational material. For the successful implementation of the scientific principle, the following is necessary: to ensure that the development of each studied object or event is considered taking into account its interaction with other objects and events; to express them clearly in the definitions and terms accepted in this science and to provide conditions for the formation of correct ideas and scientific concepts; presenting a certain scientific concept within the framework of a relevant scientific theory or hypothesis and comparing the studied concept with opposite concepts; to reveal the history of the discovery of the studied phenomena; to give an understanding of the methods of scientific research in which the studied phenomenon was discovered.

The use of modern didactic teaching tools provides new highly effective teaching tools. Software tools provide intellectual support for students' actions, quick organization of actions using powerful computing tools with high accuracy. The traditional tasks of the science of "thermodynamics and heat engineering", that is, modeling, management and diagnosis of the studied processes and phenomena, will be the most understandable for students due to the use of information technologies in the educational process. During the development of the teaching methodology, a number of questions arise related to the specific features of teaching based on modern didactic means of teaching a specific subject. In the process of research, it was determined that it includes the tasks of forming a methodical system that includes goals, educational content, forms and methods of implementation.

Using modern didactic teaching tools "Thermodi In the process of teaching the general professional science of "chemistry and heat engineering", the demand for scientific knowledge is presented at a high quality level. Mathematical and simulation modeling capabilities allow for deep and comprehensive study of processes and events. The principle of ease of teaching can be implemented thanks to the more accurate presentation of the complex topics of the general professional science "Thermodynamics and heat engineering" through the use of modern didactic teaching

tools. The use of educational programs simulates the teaching effect of a pedagogue and allows to repeat it many times and at a slow pace, depending on the individual characteristics of students. Demonstration of teaching means sensory perception of studied objects or their models. For example, it is extremely difficult to understand and master the educational material on the topic "Liquid pressure". It is usually difficult for second-year students with no practical experience in this field to visualize a fluid pressure device, a transmission line, and a pressure gauge. Emotional cognition is the source of all students' knowledge about the external world, and emotional perception itself is controlled by abstract thinking. Modern information technology environment significantly improves the quality of visual information by creating visual abstraction.

Conclusion: Modern didactic teaching tools significantly increase the student's activity by creating various learning situations, giving him the opportunity to choose an individual educational trajectory of one form or another. Increased student activity, firstly, with the need to create individual versions of the educational task and instant feedback (confirming the correctness of the action or explaining the correct direction of the solution), and secondly, with the final assessment of the performance of the tasks directly in the auditorium conditioned. In addition, an atmosphere of healthy competition is created in the group. The principle of systematicity and sequence ensures the systematic and continuous assimilation of the set of specific knowledge related to the general professional science of "Thermodynamics and heat engineering" by students. The principle of stability of knowledge acquisition is also gaining new meaning. Deep understanding and memorization of this material is of the greatest importance in mastering the educational material. In this process, students have to repeatedly refer to studying and memorizing educational material. Repetition should be accompanied by checking and evaluating student knowledge. Information technologies ensure the repetition of the learned material and comprehensive testing of learners.

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