

## EFFICIENCY OF THE EXPLANATORY AND ILLUSTRATIVE METHOD IN THE COURSE OF TEACHING THERMODYNAMICS WITHIN THE CURRICULUM OF THE TRAINING OF BACHELORS MAJORING IN 184 MINING

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The article examines the explanatory and illustrative method during teaching the academic discipline “Thermodynamics” to higher education institutions students. It is known that the effectiveness of training depends on the teacher’s ability to choose a training method in certain conditions for a specific lesson. The main attention is paid to the aspect of the relevance and effectiveness of the explanatory and illustrative teaching method in modern education, as the scope and possibilities of displaying thermodynamic concepts, processes, methods of thermodynamic analysis have expanded.

The explanatory and illustrative teaching method is supposed to ensure students’ understanding of the educational material. Understanding is not just a result, but a process when the learner perceives the connection between the unknown and the known, combines an unknown concept with an already known one, and can compare the unknown with the known. The features and characteristics of the explanatory and illustrative teaching method are analyzed. The advantages of the specified method during the presentation of a large amount of educational material, structuring of information and outlining the connection between the concepts of the discipline “Thermodynamics” are considered. Tables and diagrams, graphs and schemes are an integral part of studying the discipline “Thermodynamics”. It is with the help of them that you can quickly learn the laws of thermodynamic processes of ideal and real gases, cycles of steam power plants, internal combustion engines, and gas turbine plants. Examples of graphic and schematic presentations of some concepts of thermodynamics are considered, which clearly reflect the relationship between new concepts and previously considered ones, and allow mathematical dependencies to be presented schematically or graphically. Graphic display of concepts allows the student to create a set of knowledge on the use of different parameters. The list of the main diagrams used by students in solving applied problems of energy conversion, in particular in thermal energy systems and installations of mining enterprises, is given. The importance of the simultaneous combination of oral explanation with illustrations, schemes, diagrams when teaching the educational discipline «Thermodynamics» is noted.

It is determined that if the student gives his examples that illustrate the content of the topic, or can transform the verbal presentation of the material into tabular or graphic form, in the form of formulas, then a conclusion can be drawn about students’ understanding of the material. Learning the discipline consists of a sequence of generation of separate concepts, concepts of a defined topic, and then during the further study of «Thermodynamics» a system of concepts is formed. The key to the success of the formation of concepts is whether the connection between the explanatory concept of the discipline and others, which were previously studied by students, is realized. It was determined that the explanatory and illustrative teaching method is convenient when it is necessary to convey a large amount of educational material in a short period of time. Its use is justified while learning fixed concepts, facts, and laws. It is concluded that in lectures on the discipline «Thermodynamics» it is the explanatory material that plays an important role, since «Thermodynamics» is the foundation of many special disciplines in the future.

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