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INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE STUDY OF PROFESSIONAL ELECTRICAL DISCIPLINES

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Modern production requires rapid adaptation of graduates to the terms of employment activities. Existing forms of educational process largely provide production requirements. Given the diversity and dynamic operating conditions, it is important to ensure flexibility of professional training, that is, its ability to adapt to the dynamics of production conditions and industrial relations.

The effectiveness of training future specialists of engineering specialties using computers largely explained by illustrating the program material to better understand and learn abstract concepts, to form practical skills.

Attempts to bring the process of professional training to the real production conditions in some sectors of the economy were made repeatedly. The introduction of the learning process only certain elements of a production cycle does not always bring the desired results, but because in the future, it remains open whether increasing the quality of training in higher education.

Information technologies provide new additional features intensify the educational process which include:

- Individual approach to teaching and learning that is most pronounced in the use of adaptive forms of informative - of communication technologies;

- The possibility of visual representation of objects, phenomena and processes that significantly facilitates the assimilation of the most difficult subjects compared to their submission through traditional means of teaching;

- The possibility of building students models of real objects and processes and their study using computer modeling applications;

- The speed and ease of finding information provided by means of computer technology;

- Automated control of the learning process with the objective assessment of students;

- Implementation of distance learning.

In the teaching of informative - of communication technologies among special place called multimedia technologies that enrich the learning process. When used in the classroom multimedia teaching, its structure does not change, they continue all stages, only changing temporal characteristics, which enables more comprehensive submit material.

The use of a multimedia depend primarily on the goals and objectives of a particular discipline.

Leading role for specialist plays a computer simulation, which is most appropriate to apply to laboratory studies of electrical engineering disciplines.

Thus, computer simulation can solve the following problems:

- Individualization of the laboratory work of students, which is achieved by changing the parameters of arbitrary elements of the object;

- Reducing preparation time for laboratory work, formulation and execution of the experiment and report by automating calculations, graphical constructs, as well as the possibility of using electronic reporting forms;

- Effectively prepare students for the real experiment by obtaining preliminary results, which further enable their analysis almost in real settings.

Training with the use of computer modeling can be done - in different ways: to offer students the task to complete or carry out its model modification and redesign.

Experience with computer simulation and electrical power plants shows that one of the most promising is the MatLab software environment with integrated tool packages (Simulink, Power System Blockset, Stateflow, etc.). The software has a sufficient number of examples converters that can accelerate the construction of new models.

However, we note that the implementation of computer modeling is not always sufficient for students. In many cases, more important to conduct real experiments to obtain skills working with electrical and power equipment.

Vital issue of further development of the described problem is to build research and experimental models of educational process, based on the invariant principles of educational technology that regulate appropriate forms of educational interaction.