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**CREATION OF SOFTWARE AND METHODOLOGICAL SUPPORT FOR THE SUBJECT "ELECTRICAL ENGINEERING AND ELECTRONICS" IN TRAINING ENGINEERS IN TECHNICAL UNIVERSITIES ON THE BASIS OF MODERN INFORMATION AND PEDAGOGICAL TECHNOLOGIES**

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*Abstract. The article deals with the issue of improving the training of engineers of technical universities for professional activities based on modern pedagogical and information technologies in the field of "Electrical Engineering and Electronics". The article can be used by engineers who train in technical universities in the subject of "Electrical Engineering and Electronics".*

*Keywords: engineer; scientific and methodological; security; program-methodical; digital technologies; innovative; improvement; enrichment; filling; information; Technics; materials; database.*

It is known that when preparing future engineers in technical universities in the specialty "Electrical Engineering and Electronics", it is necessary to determine the software and methodological tools based on modern pedagogical and information technologies, intelligent technological maps, intelligent learning systems. To this end, technical higher educational institutions can become an important assistant, a didactic base for preparing engineers for professional activities in the subject of "Electrical Engineering and Electronics" based on modern pedagogical and information technologies. These are science and technology, pedagogical innovations, innovative methods and technologies of education,

This article discusses the study of the basics of software in teaching "Electrical Engineering and Electronics" on the basis of modern pedagogical and information technologies in the preparation of engineers for professional activities in higher educational institutions.

The results of our research in this area show that the sequence of tasks in solving a problem should be scientifically and methodologically substantiated [1-3].

An important aspect of the fundamental basis of the software for teaching the subject "Electrical Engineering and Electronics" based on modern pedagogical and information technologies in preparing engineers for professional activities in technical universities is the introduction of modern educational technologies and curricula. A wide range of opportunities will be provided for the use of teaching methods, and the educational process will be organized on the basis of a specific curriculum.

Taking into account the above, the tasks of preparing the foundations of the software for teaching the subject "Electrical Engineering and Electronics" on the basis of modern

pedagogical and information technologies in the preparation of engineers for professional activities in higher educational institutions were determined and justified in the following sequence.

1. Identification of the main components of software based on modern pedagogical and information technologies in the direction of "Electrical Engineering and Electronics" in technical universities. This requires an integrated approach to the training of engineers, mainly based on digital technologies, in teaching this discipline. This is due to the effective use in the training of engineers based on digital technologies of professional computer and didactic games, intelligent learning systems, educational information tools, intelligent technological maps, computer simulators, etc.

2. Definition of topics in the direction of "Electrical Engineering and Electronics" on the basis of modern pedagogical and information technologies in the preparation of engineers for professional activities in technical universities and the development of a mechanism for integrating information into their content. Data on the subject "Electrical Engineering and Electronics" is collected on the basis of modern pedagogical and information technologies, which are initially integrated and divided into systems depending on the purpose of the study. They will be used to create a database on the use of digital technologies for software development, in particular in intelligent learning systems.

3. Organization of innovative integrative education in the subject "Electrical Engineering and Electronics" on the basis of modern pedagogical and information technologies in the preparation of engineers for professional activities in technical universities.

It is known that such terms as innovation, pedagogical innovation, innovative education are now fully used in modern pedagogy. In this regard, innovative software and didactic complexes are being prepared. The effectiveness of such complexes in training will be much higher. The following source is also important in this respect:

"Innovative software and didactic complex" - a complex designed for the effective teaching of a particular subject, based on the best methodology aimed at increasing the activity of students in the process of mastering the subject, didactic mastering of educational material using special software and multimedia information technologies. is a multifunctional software tool that organizes the educational process covered by the release.

The main goal of teaching the subject "Electrical Engineering and Electronics" on the basis of modern pedagogical and information technologies to engineers studying in technical universities:

- training of engineers in technical universities as innovative, competitive, mature personnel;
- optimization of professional training of engineers in technical universities;
- Improvement of software and methodological support in the preparation of engineers for professional activities in technical universities.

4. Development of software for the discipline "Electrical Engineering and Electronics". In this case, special attention should be paid to the following areas:

- effective use of modern pedagogical and information technologies, including

computers, in the educational process in the subject "Electrical Engineering and Electronics" in the preparation of engineers in technical universities; with software, hardware, mathematical and organizational support of computers; development of skills in working with interactive work programs (applied and service programs);

- Further development of skills in creating programs by types of pedagogical software based on modern pedagogical and information technologies in the direction of "Electrical Engineering and Electronics" in the preparation of engineers in technical universities;

- Formation of skills for the development of demonstration programs, educational programs, control programs, information retrieval programs, expert evaluation programs in the subject "Electrical Engineering and Electronics" based on modern pedagogical and information technologies in the training of engineers of technical higher educational institutions;

- Determination of technologies and goals for creating a scenario of pedagogical software based on modern pedagogical and information technologies in the field of "Electrical Engineering and Electronics" in the preparation of engineers of technical universities, equipping them with knowledge on the use of pedagogical software in education management, etc.

The goal is to help optimize the process of forming the following knowledge, skills and competencies based on modern pedagogical and information technologies in the field of "Electrical Engineering and Electronics" in the preparation of engineers of technical universities: modern pedagogical and information technologies, as well as their support; knowledge of computer programs; have theoretical knowledge about the use of information technologies in the educational process and be able to apply them in practice; be able to use modern pedagogical and information technologies, including the Internet and e-mail; multimedia technologies; network technologies; Internet technologies and their services, access to distance learning; knowledge of pedagogical programs and their types; expert learning systems, automated learning systems and their use; know and be able to create the principles of creating pedagogical programs, the technology for creating ascript for pedagogical programs; be able to create pedagogical software in programming languages; be able to use the technical means of creating pedagogical software; knowledge of the basics of e-pedagogics and e-learning tools; know about the possibility of using pedagogical programs in scientific and technical work; know the methods of formation and organization of computational experiments; must be able to perform design methods in mathematical modeling and calculation, etc. know and be able to create technology for creating scenarios for pedagogical programs; be able to create pedagogical software in programming languages; be able to use the technical means of creating pedagogical software; knowledge of the basics of e-pedagogics and e-learning tools; know about the possibility of using pedagogical programs in scientific and technical work; know the methods of formation and organization of computational experiments; must be able to perform design methods in mathematical modeling and calculation, etc. know and be able to create technology for creating

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5. Development of pedagogical support for the formation of software and didactic support for the preparation of professional activities on the basis of teaching the subject "Electrical Engineering and Electronics" on the basis of modern pedagogical and information technologies in the preparation of engineers in technical universities.

When training engineers in higher educational institutions, special attention is paid to software, hardware and software and hardware, additional auxiliary software aimed at achieving specific didactic goals in the field of electrical engineering and electronics based on modern pedagogical and information technologies. They also should not neglect pedagogical software and tools for the intellectualization of education. Pedagogical software tools that should be used for this (training programs, information retrieval programs, demonstration programs, control programs, exercise programs, programs that create a virtual learning environment with the participation of a teacher, etc.).

The goal is to optimize the process of improving the software and methodological support for the training of engineers in higher education in the direction of "Electrical Engineering and Electronics" based on modern pedagogical and information technologies. First of all, attention is paid to software-intellectual means of presenting ready-made data on the subject "Electrical Engineering and Electronics" (demonstration tools, virtual stands, intelligent flow charts, etc.) - to familiarize with the ABC of methodological support.

In conclusion, it should be noted that the above fundamental foundations of software and methodological support for the subject "Electrical Engineering and Electronics" based on modern pedagogical and information technologies in preparing engineers for professional activities in technical higher educational institutions can be an important educational and didactic basis for preparing mature students. employees.

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