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USE OF NEW INFORMATION (COMPUTER) TECHNOLOGIES IN TEACHING THE DISCIPLINE «INSTALLATION OF ELECTRICAL EQUIPMENT AND CONTROL SYSTEMS»

The article deals with the importance of the use of modern ICT in the preparation of highly qualified specialists of engineering specialty in teaching the discipline "Installation of electrical equipment and control systems." The types of models used were examined in the given preparation.

***Keywords:** computer technology and modern information technology, engineer, engineering, organizational model, engineering and software.*

Information technology appeared with the emergence of the information society. Academician VM Glushkov first analyzed the concepts and perspectives of development of information technology (IT). IV Robert explored the didactic problems and perspectives of using of IT in education

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The article deals with the importance of the use of modern information and computer technologies in the preparation of highly qualified specialists of engineering specialty in teaching the discipline "Installation of electrical equipment and control systems." The types of models used were examined in the given preparation.

The relevance of the study. The development of computer technologies in Ukraine began in the mid 70-ies of XX century. Algorithmized computer systems (reference and Testing) became the most widely used.

Starting point of new information technology in higher education is considered to be a government resolution "On Measures to provide students of secondary and higher education institutions with computer literacy and widespread introduction of computer technology into the learning process," adopted in 1985. Working Group under the leadership of academician AP Ershov submitted for discuss the concept of education informatization, which defines the concepts of "informatization of society", "informa-tion of education" and implemented the term "new information technologies".

Information technology appeared with the emergence of the information society. Academician VM Glushkov first analyzed the concepts and perspectives of development of information technology (IT). Teaching Problems and perspectives of using IT in teaching process were explored by I.V. Robert.

Y. Mashbits identified psychological foundations of computer training. M.I. Zhaldak proposed and substantiated the system of training teachers to use IT in the learning process. S. Papert formulated the idea of "computer learning environments" [1, P.110].

Modern information technologies offer students access to non-traditional sources of information, improve the efficiency individual work, give up entirely new opportunities for creativity, finding and fix-ing all sorts of professional skills that allow to realize the entirely new forms and methods of teaching.

Information technologies of education to achieve didactic goals provide the teacher with an opportunity to use certain types of training and to project educational environment.

Tools (software - designers of sessions) allows teachers operatively update the content of training and monitoring programs in accordance with the appearance of new knowledge and technologies. The teacher receives additional opportunities for supporting and guiding the development of students' personality, creativity and organization of their work together.

The purpose of the article is to investigate the importance of using information technology in teaching the subject "Installation of electrical equipment and control systems."

Information Technology training system(ITS) is a methodology and technology of educational process with using the advanced electronic means of learning, including computers.

Information Technology System (ITS) offers for students access to non-traditional sources of information increases the effectiveness of self-study, gives a completely new opportunities for creativity, finding and securing professional skills.

In modern literature, modern information technology (ITS) is defined as the set of methods and technical means of collecting, organizing, processing, transmission, presentation of information using computers and computer communication.

Informatization of Education - is the process of providing education with theory and practice of development and use of modern forms of information technology-oriented implementation of psychological and educational purpose of of training and education.

The concept of information technology appeared with the emergence of the information society, the foundation of social dynamics in which are non-traditional, physical, and information resources - knowledge, science, organizational factors, and intellectual abilities of people [1, p.75].

Academician V.M. Glushkov first analyzed in detail the prospects of IT.

Information technology – is human-machine technology of collection, processing and transmission of information.

To improve the quality of training of engineering disciplines - technicians, electricians, the level of training and material base is of essential significance. Wide application into the educational process of modern means of training – is the use of modern information technology. It gives possibility of organizing teaching and learning activities of students at a higher level, increasing of teachers and students working abilities. Skillful application of training can significantly increase the share of selfness of students, expand the capabilities of organization on the lesson in their individual and group work, to develop mental activity and initiative in mastering the work material in the discipline, which is the key in the specialty.

In the organized academic cognition students are given the opportunity to sensory perception of the phenomena studied and objects that can not always be directly replicated in the classroom. With means of training (drawings, diagrams, models, software) in the minds of students images of events and objects are memorable. Relying on visual images, the teacher leads the students to realize the essence of phenomena and objects. This approach is associated with abstract thinking, using abstract concepts. Thus visual images provide a link thinking of an object, phenomena, provide the thinking of necessary information, helping to reveal the intrinsic properties of the phenomena, the object. ICT provides a real opportunity to improve the efficiency of teaching activities in teaching lectures, laboratory and practical classes, and improve self-study and self-study of students for the classes on the discipline "Installation of electrical equipment and control systems." ICT can not only make radical changes in the understanding of the category of "teaching tool" about the learning process, but also greatly affect the objectives, content, organizational forms and methods of training, education and development of professional abilities of future engineers and technicians.

The use of computers are effective at all stages of the process of teaching the discipline

1) on stage of presentation educational information to students;

2) at the stage of learning during interactive communication with the computer;

3) the stage of repetition and consolidation of learned knowledge and skills, at the stage of intermediate and final control and self-control of achieved training results;

4) during correction of the learning process and its results through the improvement of educational material dispensing, its systematization.

However, the use of computers in education should not displace training specialists in real objective direction, scilicet the replacement of real physical phenomena only model (virtual) representation of the computer screen is not allowed [3, p.98].

When carrying out laboratory practical work of the discipline the use the following organizational models of educational interaction between students of computer technology: class-task, project-group-ing, individual activities is recommended.

Class-training model is characterized by the fact that students and teacher work area is equipped with computers. Interaction with the computer, is usually organized in such a way that all students complete the same type or a similar action. Teacher`s problem in this case is simplified, he raises the problem, showing how to solve and control the process.

Project group model is characterized by the fact that a group of students decides the overall learning task (developing a draft) by means of mastering certain knowledge. The project activity involves the existence of different roles involved. The computer is used when necessary in accordance with the the expansion of roles between students. For 6-8 project teams 2-3 computers is enough to ensure the work of the entire training group. This organizational model is difficult for the teacher, especially evaluation of academic performance of each student.

Project group model is effective even with a limited number of computers at the educational institution, because it can effectively be employed at the organization of independent testing work of students.

The model of individual work is implemented in the best way at presence of the home computer, but it can be applied if the library of the institution has 1-2 computers for example.

This model allows us to master the computer as a tool, working tools, using different software (engineering and computer software) that embodies an artificial environment by creating a virtual reality application of simulators into the life [3, p.99].

Model of individual work creates the conditions to manage their own information when the computer user collects materials that require special attention to the organization of their conservation and restoration.

During the conduction of laboratory work on the discipline with students it is effective to use the class-training model with the using of engineering software of the type «Compass-3D-V13», «Autokad-2013». This engineering software allows students firstly to simulate the sequence of installation (connection) of the scheme using engineering software and then perform the given work directly at lab conditions**.** It allows the teacher to check the ability students to think of engineering and be able to analyze errors when doing connection (installation) of electrical equipment at the workplace. This in turn increases the rate of electrical circuits construction and appropriately the quality. It reduces the amount of disadvantages, and therefore the number of emergency regimes of the equipment, which in turn will increase its service life and integrity.

This will allow to student to analyze pre-order of operations with the mounting of equipment before the the direct schemes construction at the workplace and getting acquainted with the technical-graphics applications that are essential for the future engineer. In studying the subject material that is submitted for self-work it is reasonable to use the model of individual students' activity,

which is being implemented easily at presence of the personal computer and appropriate software at almost every student's home.

This model allows to train future engineers at high technical and engineering level.

Conclusions. Modern information technologies have absorbed into itself an avalanche achievement of electronics and mathematics, philosophy, psychology and economics. As a result the formed viable hybrid marked a revolutionary leap in the history of information technology. Modern education is filled and riddled with streams of information that needs treatment. Therefore without information technology, as well as without energy, transport and chemical technologiessociety is unable to function properly. A question of the application of modern information technology in the preparation of highly qualified specialists and conducting lessons with technical subjects has raised sharply.

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