

Use of Innovative Technologies in Teaching Electrical Engineering

Yakubjon Usmanov

Associate Professor of Fergana State University,
candidate of physical and mathematical sciences

Ikromova Komila Hamidullo qizi

Master of Fergana State University, Uzbekistan

Annotation: This article provides information on the science of electrical engineering, its development, the main issues of electrical engineering, the properties of electricity, the use of innovative technologies in teaching electrical engineering, the use of information and communication technologies, competence, professional competence, personal competence, methodological competence, innovative approaches.

Keywords and phrases: power engineering, efficiency, electrical engineering, radio engineering, electromechanics, automatic equipment, innovative education, training, video training, webinar, internet conference, portfolio, graphic organizer.

Modern electricity is the leading industry in the country. It plays a decisive role in scientific and technological progress in accelerating the production of any industry. Man uses electricity in all areas of his activity. Electricity differs from other types of energy by the following remarkable properties:

a) extraction from other types of energy (mechanical, chemical, thermal, light, nuclear) is extremely simple;

b) can be easily distributed over long distances with high efficiency (FIC) transmission and loads;

c) can be easily converted to other types of energy;

d) loads of different capacities can be connected to one source;

g) simple change of various physical parameters to current and voltage;

e) signals can be transmitted over long distances at once (telephone, telegraph, radio).

These features of electricity in a short historical period have allowed to raise not only the main issues of electricity, but also non-electrical equipment to a new level of quality. At the heart of the science of electrical engineering, electrical, radio, electromechanical and automatic equipment, including computer technology, has developed rapidly. The emergence of electrical engineering is associated with the creation of an alternating current source and discoveries in the field of electricity and magnetism.

Developmental education in the teaching of electrical engineering is a theory of education that, at a certain time, ensures the educational, pedagogical, spiritual, mental and physical development of the student and his adaptation to society and life in a rapidly changing world.

Every state that thinks about its future must be able to purposefully direct all the social influences on the life of the individual in the life of society for the development of man, to understand and express his identity.

With the use of developmental educational technologies, it leads to an increase in students' interest, the transformation of knowledge into skills, an increase in the quality and effectiveness of knowledge.

Ensuring the quality of education - is reflected in how the educational process is organized, along with the level of professional training of students and its compliance with the established quality criteria. This task is reflected in a number of laws and regulations, in particular in the National Program of Personnel Training. reflected in the form of principles. The first President of the Republic of Uzbekistan Islam Karimov said that the socio-economic and practical significance of this problem "from the first years of independence there was a great need for radical reform of education and training, science and vocational training throughout the country." Therefore, increasing the efficiency of education, developing the level of professional competence of specialists, directing teachers to innovative activities, the introduction of innovative education and information and communication technologies in the educational process in higher education institutions, the acquisition of advanced foreign experience and targeted orientation are urgent

tasks. marked. Modernization of the higher education system requires an innovative approach to the educational process. In the current process of globalization, the socio-pedagogical necessity of an innovative approach to education is measured by:

1. Scientific and technical progress and socio-economic renewal of the system of continuous education, in particular, the improvement of the educational process in higher education institutions through the study of best international practices, innovative approaches to education and the use of information technology;

2. Development and implementation of effective organizational forms, technologies of person-centered teaching that serve to develop the level of knowledge of students, intellectual potential, social activism, creativity;

3. The need to develop the professional and innovative competence of teachers in relation to the development and implementation of pedagogical innovations.

Indeed, the idea of an innovative approach to education differs from the traditional approach in that the content and results of education are person-centered, the content, form, methods and tools of education are focused on the latest achievements of science and technology, best practices, modern methodologies. V.A. Slavenin explains the innovative approach to the pedagogical process by introducing innovations into the purpose, content and form of organization, teaching and education of joint activities of teachers and students.

Any innovation introduced into the education system implies the availability of information and methodological support. Therefore, the study, analysis and generalization of best pedagogical practices in the introduction of innovations in the educational process of higher education institutions and the implementation of the achievements of pedagogical and psychological sciences, improving the content and methods of educational processes through the use of modern pedagogical and information and communication technologies. This, in turn, as an effective form of organization of training lectures (problem lectures, lectures-seminars, virtual-technological lectures, visual lectures, binary lectures, introductory lectures, lectures-conferences, informational lectures, lecture discussions, commentary lectures, online lecture) training, video training, webinars, internet conferences, and as innovative teaching methods, the use of problem-based methods, interactive methods, practical games, educational projects, portfolios, graphic organizers and information and communication technologies.

Another important component in the implementation of innovations in the educational process in higher education institutions is the teacher, his professional competence and innovative activity.

Competence - compliance with the requirements of the activity, suitability, ability. Professional competence of a specialist is a criterion for assessing his professional training and professional maturity.

There are various approaches to the concept of professional competence in the scientific community. It is used as a feature that characterizes specific activity requirements in relation to the subject of labor or, more precisely, the attitude of the subject to specific aspects of a particular activity. For example, research by researcher E.F. Zeer on the functional development of professional competence has shown that different forms of competence become integrated as they reach professional maturity and that their relationship to professionally important personality traits increases. In particular, the basic levels of professional competence include personality traits that determine professional training and experience, self-awareness, self-confidence, correct acceptance of shortcomings shown by other people, and other similar professional maturity. The analysis of the above points allows to fully interpret the professional competence of the teacher as a set of specific features, such as personal, social, creative, methodological competence.

Personal competence is determined by such criteria as a person's social outlook, scientific and intellectual potential, creativity, ability to actively engage in interpersonal communication, tactical approach to conflict resolution, the degree of formation of personal and professional qualities in accordance with professional requirements, active life and civic position .

Methodical competence is the ability to know, master, apply in practice the forms, methods and tools of effective organization of the educational process, qualitative analysis of the results of activities, evaluation, study of best international pedagogical practices, design of the educational process, successful implementation.

Particular attention was paid to the use of innovative approaches in the formation of methodological competence in future teachers of vocational education. Motives such as self-activation, self-creativity, self-knowledge and creativity play an important role in a teacher's work. This allows the teacher to shape the creativity of the individual. An important condition for innovation is to create a new state of communication. The approach to the learning process focuses mainly on the formation of a set of knowledge, skills and competencies.

Teaching methods first of all appear in the mind of the pedagogue in the form of the generalized project of activity in any direction.

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