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**CONDITIONS FOR IMPROVING THE PROFESSIONAL
COMPETENCE OF A TEACHER OF ENERGY DISCIPLINES
BASED ON MODERN INFORMATION TECHNOLOGIES**

**УМОВИ ПІДВИЩЕННЯ ПРОФЕСІЙНОЇ КОМПЕТЕНТНОСТІ
ВИКЛАДАЧА ЕНЕРГЕТИЧНИХ ДИСЦИПЛІН
НА ОСНОВІ СУЧАСНИХ ІНФОРМАЦІЙНИХ ТЕХНОЛОГІЙ**

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ABSTRACT

The article examines the existing experience of using modern information technologies in the educational process, considers the possibilities of their application to increase the professional competence of the teacher of energy disciplines in the conditions of distance education. The method of organizing the professional training of teachers for the effective use of modern information technologies in pedagogical activities is proposed.

The range of issues related to the substantiation of requirements for the use of modern information technologies in the educational process, which has a powerful impact on the results and quality of work of the higher education institution, is outlined. An overview of the existing experience of using modern information technologies to improve the professional competence of the teacher of energy disciplines is considered. The professionalism of a modern teacher of energy disciplines in the conditions of distance education consists not only in the knowledge of his subject and the methodology of its teaching, but also in the need to possess modern information technologies - competence and the desire to possess information culture.

Attention is paid to the issue of formation and development of the informational and pedagogical competence of the teacher of energy disciplines. The informational and pedagogical competence of a teacher of energy disciplines is defined as his readiness and ability to independently use MIT in pedagogical activities to solve a wide range of educational tasks and to design ways of improving qualifications in this field. In the new conditions, the professional career of any teacher depends on how well he is able to find and receive, perceive and use new information in the educational process in the conditions of distance education in a timely manner. And for this, a modern teacher must develop the ability to manage the educational process and self-evaluate the information received.

It is also considered how the use of modern information technologies facilitates the activities of the teacher of energy disciplines in conducting classes. Possibilities of

using modern information technologies at all stages of conducting modern classes in the conditions of distance education.

Key words: *professional competence, informational and pedagogical competence, teacher of energy disciplines, modern information technologies, educational process.*

Introduction. At the current stage of education reform in Ukraine, the essence of which is a change in the goals and content of education, technological re-equipment of the educational process, the emergence of new methods and organizational forms in education, researchers identify the following processes that reflect these changes.

First of all, this is the active development and fragmented implementation of modern information technology (MIT) tools in traditional educational disciplines and, on this basis, teachers' development of new methods and organizational forms of educational work.

The question of a radical revision of the content of education, traditional forms and methods of educational work is being put into practice.

The development and mastering of modern educational and methodical support systems («software and methodical complexes», «computer courses», «improvement of qualifications»), which include software for technical teaching aids (TTA), various video and audio materials, is underway. texts for students and methodological materials for teachers.

Analysis of current research. The problem of widespread use of modern information technologies in the field of education has recently attracted increased interest in domestic pedagogical science. A great contribution to solving the problem of using modern information technologies in education was made by domestic and foreign scientists: R. Gurevich, I. Zakharova, M. Kademiya, N. Morse, E. Polat, I. Robert, Yu. Ramskyi, V. Sumsnyi, Yu. Mashbyts, S. Papert, G. Kleiman, B. Sandov, B. Hunter, and others [4; 7–9].

The introduction of modern information technologies into the educational process of higher education institutions entails not only the appearance of modern technical means, but also new forms and methods of education. Various didactic problems of informatization of education were reflected in the works of: A. Yershova, A. Kuznetsov, T. Sergeeva, I. Roberta; methodical – B. Gershunskyi, E. Mashbitsa, N. Talyzinoi; psychological – V. Rubtsova, V. Tikhomirova and others [1; 4; 7–9].

The purpose of the research is the scientific substantiation of the theoretical and methodological conditions for improving the professional competence of the teacher of energy disciplines on the basis of modern information technologies.

Research methods and techniques. The main research method of this article is analytical. The formation of conclusions is possible under conditions of careful analysis of the current state of the problem.

Results and discussions. In the process of training specialists in higher education institutions (HEIs) in energy specialties, the task of adapting software to the goals of the educational process is set, information technologies are becoming an integral component of the modern working environment, especially in the

conditions of distance education caused by the military situation in Ukraine. The application of MIT elements in the educational process is directly related to the improvement of the professional competence of the future specialist. The availability of theoretical and practical knowledge in this field increases the demand for a specialist in the labor market.

However, at the current stage, institutions of higher education are not ready to provide this competence to graduates. The problem lies in insufficient professional competence of teachers, and sometimes its absence in the field of MIT.

Therefore, in modern conditions, the problem of professional development of a modern teacher of energy disciplines and the development of his professional competence is becoming more and more important.

The average age of a modern higher education teacher is approaching 50 years. The high average age of teachers suggests that their basic education lacks computer science and computing. Data show that most teachers fill this gap in their education on their own. Thus, the task of increasing the effectiveness of the independent work of teachers regarding the formation of their informational and research competence becomes very relevant [2].

Recently, almost all higher education institutions today are equipped with computer classrooms (although their equipment is not the most modern, but it still allows you to use various software tools, as well as to develop your educational software products at a fairly high level), but they are not yet available for all teachers, and first of all for teachers of energy disciplines. At the same time, some teachers still have access to the global Internet information network – both independently and within the walls of higher education institutions. The study showed that the majority of teachers rate their personal computer user skills in the conditions of distance education as poor or consider them to be completely absent [2; 5].

The absolute majority of teachers feel the need and need to improve their qualifications in the field of MIT. It should be noted that the high needs of the teaching staff for the mastering of new information technologies and the readiness to use them in the educational process due to the lack of appropriate qualifications, the task of developing forms and methods of effectively improving the professional and pedagogical qualifications of teachers in the field of MIT, i.e. the formation of information and pedagogical competence the teacher [2; 5].

The professionalism of a modern teacher of energy disciplines in the conditions of distance education consists not only in the knowledge of his subject and the methodology of its teaching, but also in the need to possess MIT – competence and the desire to possess information culture.

The informational and pedagogical competence of a teacher of energy disciplines is defined as his readiness and ability to independently use MIT in pedagogical activities to solve a wide range of educational tasks and to design ways of improving qualifications in this field. In our opinion, the informational and pedagogical competence of a teacher of energy disciplines includes the following components: cognitive, emotional-volitional, managerial. The cognitive component determines the degree of MIT mastery; emotional and volitional – readiness to use

MIT in professional activities; managerial – effective management of students' activities in the field of using MIT in future professional activities.

The information competence of a modern teacher determines such components of his professional activity as: possessing the skills of working with information submitted in electronic form; knowledge and ability to use rational methods of searching and storing information in modern information arrays; ability to submit information on the Internet; mastering the skills of organizing and conducting lectures and seminars using TTA; ability to organize independent work of students using Internet technologies; mastery of the skills of using TTA on a specific subject, taking into account its specifics.

The Methodical Council of the Faculty of Physical, Mathematical, Computer and Technological Education of the Berdyansk State Pedagogical University actively works on the formation of information and research competence of teachers, special attention is paid to teachers of energy disciplines, since they are the ones who train future energy workers. Various forms of work are used to solve the task: work of methodological associations, master classes, individual counseling, participation in Internet Olympiads, Internet conferences, conducting integrated classes (energy disciplines and computer science), cooperation with students, development of methodological documentation with using MIT, etc. I would like to note that the effectiveness of learning and further use of MIT is determined, first of all, by the teacher's awareness of the fact that these technologies are a means of student development and his own professional development. At the same time, it is important that the development of the information culture of teachers can be carried out by means of modern technologies of personal-oriented education. The use of these technologies allows teachers to master modern strategies and methods of organizing work with educational information, and to develop their own information culture.

Today, serious steps have been taken in the professional development system that stimulate the desire of teachers to master MIT: courses are organized on the basis of informatization centers; methodical services conduct various competitions of computer lessons in energy disciplines; design of methodical developments, programs of special courses. Teachers of energy disciplines, whose activity was previously associated with the need to work on a computer, get to know MIT. The informational and pedagogical competence of teachers is gradually being formed, and a whole system is working in this direction. I would like to note that the functions of this system are not only educational, educational, methodical, explanatory, but also the function of psychological support of the teacher.

A similar process is taking place at the Berdyansk State Pedagogical University. Teachers of energy disciplines attend advanced training courses («Google Digital Tools for Education»), participate independently and with students in conferences (all-Ukrainian and international), pedagogical readings, etc., accompanying their speeches with multimedia presentations, use Internet resources when preparing for classes, use ready-made electronic manuals in classes, and also prepare them independently or in cooperation with students. The development of the information culture of teachers, the

improvement of their qualifications in the field of MIT, the development of the information and educational environment of higher education institutions are priorities in the activities of the Department of Vocational Education, Labor Training and Technologies of the Faculty of Physical, Mathematical, Computer and Technological Education of Berdyansk State Pedagogical University. The current development of information technologies allows the teacher to use in the learning process not only printed publications – books, magazines, but also – multimedia resources: audio and video tapes, electronic textbooks and encyclopedias recorded on CDs or stored on educational servers on the Internet. Google classroom and the ZOOM platform.

Conclusions. In the new conditions, the professional career of any teacher depends on how well he is able to find and receive, perceive and use new information in the educational process in the conditions of distance education in a timely manner. And for this, a modern teacher must develop the ability to manage the educational process and self-evaluate the information received. It is important to note the possibility of continuous education of a person throughout his life, within the framework of which a teacher can independently increase professional, general cultural knowledge and others that are required by life.

The active implementation of MIT in the educational process in the conditions of distance education allows to ensure the transition to a qualitatively new level of pedagogical activity, significantly increasing its didactic, informational, methodical and technological capabilities, which in general contributes to the improvement of the quality of training of specialists, the improvement of the professional skills of teachers of energy disciplines.

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АНОТАЦІЯ

У статті вивчено досвід використання в освітньому процесі сучасних інформаційних технологій, розглянуто можливості їх застосування для підвищення професійної компетентності викладача енергетичних дисциплін в умовах дистанційної освіти. Запропоновано методiku організації професійної підготовки педагогів до ефективного використання сучасних інформаційних технологій у педагогічній діяльності.

Окреслено коло питань, пов'язаних з обґрунтуванням вимог до використання сучасних інформаційних технологій в освітньому процесі, що має потужний вплив на результати і якість роботи закладу вищої освіти. Розглянуто огляд досвіду використання сучасних інформаційних технологій для підвищення професійної компетентності викладача енергетичних дисциплін. Професіоналізм сучасного викладача енергетичних дисциплін в умовах дистанційної освіти полягає не лише в знанні свого предмета та методики його викладання, а й у необхідності володіння сучасними інформаційними технологіями, компетентністю та інформаційною культурою.

Приділена увага формуванню та розвитку інформаційно-педагогічної компетентності викладача енергетичних дисциплін. Інформаційно-педагогічна компетентність викладача енергетичних дисциплін визначається як його готовність та здатність самостійно використовувати СІТ у педагогічній діяльності для вирішення широкого кола освітніх завдань та проектування шляхів підвищення кваліфікації у цій сфері. У нових умовах професійна кар'єра будь-якого педагога залежить від того, наскільки він здатний своєчасно знаходити, отримувати, сприймати та використовувати нову інформацію в освітньому процесі в умовах дистанційної освіти. Для цього сучасний викладач повинен розвивати в собі вміння керувати освітнім процесом та самооцінювати отримувану інформацію.

Також розглянуто, як використання сучасних інформаційних технологій полегшує діяльність викладача енергетичних дисциплін у проведенні занять в умовах дистанційної освіти.

Ключові слова: професійна компетентність, інформаційно-педагогічна компетентність, викладач енергетичних дисциплін, сучасні інформаційні технології, освітній процес.