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FACTORS PROMOTING THE TEACHER TRAINING AND PROFESSIONAL TRAINING BASED ON A HIERARCHICAL APPROACH IN THE ENVIRONMENT OF DIGITAL EDUCATION

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Abstract:
In the context of an information society, the environment of continuing education is rapidly changing due to new realities and modern educational needs. One of the most popular areas of innovative activity in the current period is the organization of training in the technical economy of higher education using electronic information educational environment tools in the training of students based on a hierarchical approach, which in turn creates opportunities for the transition to the principle of continuing education.
It should be noted that in modern developed countries and in our country, a number of terms are used in relation to distance learning technology: distance learning, distance learning, electronic learning, distance learning.

Keywords: Pedagogical process, digital technology, technical systems, hierarchical approach, teaching, scientific and methodological system, model, etc.

Introduction

In the history of the development of distance education, several stages have been developed, each of which has its own organizational models: the correspondence model, the correspondence model, the British model (open education), the telelearning model (American model).
The fifth model of education is based on complex virtual learning technologies using distance learning and electronic information and educational environments (hereinafter EIEE). As V.P. Tikhomirov noted, such an environment combines the systems of distance learning and full-time education. In such an environment, the difference between these two forms of education occurs at the network level and is practically not noticeable to the student.
Distance technologies help to expand the possibilities of full-time education by increasing the mutual capabilities of distance students, teachers, specialists, as well as information arrays, in particular, virtual educational institutions. Digital technologies lead to the creation of a spatial model of the human inner world in the form of an expanding number of areas: intellectual, emotional, figurative, cultural, historical, social, etc. All of them are closely interconnected,

dynamic and together can be called the virtual educational space of a person. This space has the ability to expand to the outside world and explore its external areas using the emotions, emotional, imaginative and intellectual capabilities of students [1].

The first term is more commonly used in everyday life in practice, since in developed countries it is more common to talk about learning, that is, the acquisition of knowledge, skills and competencies in a particular subject, rather than the educational process. Currently, the terms "learning via the Internet", "e-learning" - "online learning", which is interpreted as education using the Internet and multimedia, as well as "m-learning" - learning using mobile technologies, have been widely introduced into practice.

This is primarily due to the availability of a global network for students and the implementation of their services in this way by many educational institutions.

The periodization of the history of distance education, mainly by Canadian and American authors (Garrison, 1985; Garrison, Sheil, 1987; Nipper, 1989; Sherron, Boettcher, 1997; Gladieux, Swail, 1999), is based, as a rule, only on the change in technologies (primarily information and communication technologies).

At the same time, the formation of its various models is very clearly traced in the history of distance education. The classification of models is based not only on the differentiation of technologies, but also on the didactic principles and organizational forms of distance education.

Technologically, public open online courses have been rapidly developing over the past period: they correspond to the “State Educational Standard” of Higher Education in accordance with the requirements of the time, are placed on various platforms, can have a single entry point (“single window”), differ in the number of students and educational goals (A.A. Andreyev, V.N. Platonov, etc.). However, regardless of the form of organization of education, the problem of training engineering personnel in accordance with the requirements of the time for carrying out innovative professional activities in the conditions of digital technologies remains relevant.

In order to achieve optimal results in the professional training of engineering personnel, engineers and future engineering personnel of higher educational institutions should constantly improve their professional activities. Therefore, the professional training of future engineering personnel for innovative activities should also be carried out using modern advanced technologies in the context of an electronic information educational environment (hereinafter EIEE). In the context of digital technologies, scientists pay special attention in modern research to the use of components of the self-sufficient educational environment or its specific features at various levels of training future engineers for professional activity by participants in the educational process. Among the technologies used as the main components of the electronic information educational environment are e-mail, discussion groups (teleconferences, mailing lists, web forums, chats and web chats, etc.), Internet conferences, electronic journals, electronic libraries, instant messaging, and websites using some software to support them [2].

All software tools in one way or another form the basis of an electronic information educational environment, in which participants in the pedagogical process can communicate.

It should be noted that each technical educational tool used in an electronic information educational environment has its own strengths and weaknesses, therefore, their flexible combination or balanced balance (print, audio, television, computer or electronic) is the best way to use. In our research work, the presence of an electronic information educational environment is not possible for teachers, students, teachers, tutors, network administrators, etc., and educational institutions.

Thus, the synchronicity of communication, the use of verbal and non-verbal elements to establish a more complete understanding, the ability to change the language of communication, the ability to convey personal feelings and emotions are signs of an effective communication technology in a virtual educational environment. The fewer these opportunities, the less effective the technology is from a communicative point of view.

In this research work, the main component of the electronic information learning environment is the digital learning environment (hereinafter referred to as DLE). As M.E.Kushnir noted in his research, “a digital educational environment is a set of open information systems designed to support various tasks of the educational process. The meaning of the word “open” provides the opportunity and right to use various information systems as part of the DLE, replace them or add new ones at will.

In our research, the relationships between the components of the DLE that ensure efficiency include: the presence of feedback (level of interactivity); a variety of digital tools for feedback of various natures; language diversity (means of expression); personal orientation, etc.

However, despite the dependence on efficiency, the choice of the type of technology for communication, their selection for educational purposes is often based on other criteria, such as the availability of technology, its cost, the existing skills of participants in the educational process in using technology, etc. To achieve educational goals, various platforms based on various systems have been created: Moodle, WebCT, Electronic Learning Server / LearningSpace, Virtual ClassRoom, BlackBoard, etc. become the system-forming components of DLE. Their reasonable choice determines the success of the training[3].

The integration of virtual spaces of educational institutions and centers has made it possible to form an open DLE, solve educational problems in the classroom, outside the classroom and outside the educational institution. Students have the opportunity to preview the curriculum, get acquainted with the content of the courses, compare their knowledge with the requirements of the subject, and during training sessions they can spend time exchanging ideas, discussing different points of view.

Thus, from a technological point of view, DLE is an information sphere of interaction between participants in the educational process created by information and communication technologies, including a complex of computer tools and digital technologies, which allows you to control the content of the educational environment and the communication of participants.

However, no matter what technological innovations are introduced into education, using a computer only as a tool can support traditional teaching methods without changing the

effectiveness of the process itself. In order to move to a qualitatively different - innovative - stage of using DLE in education, the entire process of innovation should be based on an anthropocentric systemic approach, which implies the broad development of all participants in the pedagogical process not only information, digital, but also new pedagogical technologies.

The peculiarity of DLE is that, on the one hand, the teacher is "pushed aside" from direct communication with the student. On the other hand, during pedagogical interaction, he solves organizational, pedagogical and technical problems that arise in the process of communication, as well as problems of a communicative, ethical plan, since his tasks include: maintaining a favorable environment for cooperation.

All these cases show us that within the framework of DLE, not only the role of the teacher in the actual pedagogical process changes, but also the types of his activities are expanding due to the addition of technical, administrative, moral and supporting functions. pedagogical tasks

All these cases show us that within the framework of DLE, not only the role of the teacher in the actual pedagogical process changes, but also the types of his activities are expanding by adding technical, administrative, moral and supporting functions to pedagogical functions.

Thus, organizationally and communicatively, modern DLE is a complex self-adjusting and self-improving communication system that provides direct and feedback communication between the teacher, student and other members of the educational organization.

Self-adaptation means adapting the behavior and actions of the participants in the communication process to a changing situation. Self-improvement implies the gradual implementation of effective relationships, their improvement as they master more complex types of relationships.

A characteristic feature of self-organization and independent learning is the constant change of the communicative educational system - this is a constant change in the behavior of the participants in pedagogical dialogue (communicative competence) until some stability is achieved, as they accumulate experience of interaction.

Didactically, within the framework of the educational environment, using information and communication resources and technologies, educational technologies of an open model of individual education are implemented. This approach is based on: active and interactive participation of the student (individually, therefore, at his own pace, or in collaboration with one or two other people); The new roles of the teacher or the teacher as assistant, leader, educator, accompanying person, and student are characterized by more, more adapted, specific and specific features of exchange and communication [4]. At the same time, education in modern DLE is not antagonistic to existing forms of education and does not deny existing educational trends. Modern ones naturally integrate into these systems, complement and develop them, and contribute to the creation of a mobile learning environment.

In a digital learning environment, continuous education is implemented based on the use of DLE - the process and result of the interaction of subjects and objects of education, along with the creation and expansion of the learning environment by them, the identity of which is clearly determined by these objects and subjects.

In other words, DLE is created only by those objects and subjects, and not by classrooms, textbooks or technical means, but by those who participate in the educational process. This emphasizes the humanistic nature of education.

The model of training pedagogical personnel based on a hierarchical approach to professional activity in the context of digital education provides the following: the introduction of an innovative approach to the training of bachelors, masters, postgraduates and students of additional professional systems; the possibility of implementing continuity of education and building an individual trajectory of the student's professional growth; providing professional support to teachers; providing use innovative educational products, etc.

The goal of such multi-stage training is the organization of a personalized self-sufficient educational system. The tasks that can be solved using DLE are: access to electronic educational resources in accordance with the State Educational Standard (including copyright) from any place where there is access to the Internet; access to electronic libraries; conducting various types of training sessions, determining the results of students' educational activities (intermediate certification and final control); forming an electronic portfolio, etc. DLE, as a component of the electronic information educational environment, provides students with remote access to the necessary (according to the purpose) modern educational resources, databases, information systems, etc. - a constantly updated, modern digital technologies are used to organize training, it is possible to record and analyze digital traces left by students and teachers, both authors and specialists working in this environment. DLE - as a component of electronic information educational tools - is a constantly updated "living" organism, in which modern digital technologies are used to organize learning, it is possible to record and analyze digital traces left by students and teachers, authors and specialists working in this environment. The unifying basis for DLE is the educational management platform. DLE components are electronic educational resources (including - electronic resources created to support the educational process; electronic training courses - fully ready to perform didactic tasks). Electronic educational resources are presented in the form of a hypertext logical structure with multimedia applications equipped with navigation systems. DLE is presented in the form of a hypertext logical structure with multimedia applications equipped with navigation systems for managing the course and its various components, including teacher management systems, with the possibility of organizing and conducting intermediate and final certification. According to the purpose, they are developed on the basis of the educational methodological complex of the subject and / or the electronic educational methodological complex of the subject, which includes a database of electronic education systems, a student's personal account, links to online courses, a database of test questions, etc. For example, at MPGU, access to the DLE is carried out through the corporate access system[5].

Innovative technologies used in multi-level teaching allow groups of students and individual students to communicate with and among themselves, regardless of their distance from each other. Such modern means of communication are complemented by educational computer programs, such as multimedia, which replace printed texts, audio and video images.

The development of education is carried out as a transition from a "closed" model to an open one, based on the use of a digital educational environment as one of the main means of establishing communication between teachers and students.

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