



## IMPROVEMENT OF DISTANCE LEARNING TECHNOLOGIES IN THE DISCIPLINE OF FIRE SAFETY

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Article history:	Abstract:
<b>Received:</b> January 11 <sup>th</sup> 2023 <b>Accepted:</b> February 11 <sup>th</sup> 2023 <b>Published:</b> March 24 <sup>th</sup> 2023	This article highlights the trends in the use of distance learning technologies in the process of teaching the subject of fire safety, reveals the main differences between distance learning and traditional learning when teaching the subject of fire safety.
<b>Keywords:</b> fire safety, technology, technology of vocational training, pedagogical technologies, communications, distance learning, traditional training, interface, software, computer literacy.	

**INTRODUCTION.** Of particular importance is the search for new ways to expand the social partnership of higher education institutions, vocational education, virtual methodological associations aimed at training future engineers for professional activity and strengthening their practice-oriented training. The interests of the higher educational institution in the development of social interaction with vocational education: it is necessary to enrich the professional training of future engineers in the field of fire safety with practice-oriented teaching methods, expand experimental fields for independent work and research of students.

**MATERIALS AND METHODS.** Before studying distance learning technologies, we directly studied the classification of pedagogical technologies.

Pedagogical technology, in turn, is a system of development and improvement of educational processes, content, methods and means of education based on objective laws and diagnostic goals of education, i.e. the educational process, which has absorbed the innovations of science and technology.

There are various definitions of pedagogical technology, let's look at some of them:

**TECHNOLOGY** - (Greek techne - craftsmanship, art + Logos-teaching). A set of methods (techniques) used in the processing or processing of raw materials, materials, semi-finished products, etc., changing their condition, properties and shape in any area of production (Explanatory dictionary.) [8].

**PEDAGOGICAL TECHNOLOGY** is a project of the student's personality formation process that can guarantee pedagogical success independent of the teacher's skill (Bespalko V.P.) [2].

**PEDAGOGICAL TECHNOLOGY** is a model of joint pedagogical activity in which all the details of designing, organizing and implementing the provision of unconditionally comfortable conditions for students and teachers are thought out [3].

**THE TECHNOLOGY OF VOCATIONAL TRAINING** is a systematic method of developing, implementing and evaluating the entire learning and learning process, based on the study of people's ability to learn and communicate between them in order to achieve a goal, as well as working with living, inanimate means of more effective organization of the educational process. [1].

The use of information and communication technologies in the education system in combination with modern pedagogical technologies serves to improve the quality of professional training of future specialists, increases the effectiveness of training and the coefficient of useful use of the teacher's labor. In other words, today in the system of continuing education, an important condition for improving the effectiveness of training is a systematic approach to the educational process and the provision of services consisting of a variety of pedagogical activities. Currently, in education and upbringing on the basis of innovative pedagogical technologies – systemic approaches - the interaction of human potential and technical means necessary to optimize the forms of education, guarantee its results and objective assessment is demonstrated [4].

Clarifying the goals of learning, a variety of methods, techniques and tools used in the learning and assimilation processes, deepening the content of the learning and education processes-all this means improving the activities of educational institutions. While they say that improvement has no limit, that is, the end. Thus, both pedagogical

technologies and pedagogical skills are concepts without borders. The more research in this regard and the more initiative – the less it seems. This is the simplest and simplest fact of learning. Only the activity of teachers in this taglit will eventually lead to the fulfillment of a high social order [5].

As you know, innovative technologies are innovations, changes in the pedagogical process and the activities of teachers and students that require the full use of more interactive methods of its implementation. Interactive methods are so-called collective ways of thinking, that is, methods of pedagogical interaction that are an integral part of the content of learning. The uniqueness of these methods lies in the fact that they are implemented only through the joint activity of the teacher and the student-student, the free interaction of students-cadets, their influence on each other. Including the requirements for the personal qualities of the teacher:

exactingness, truthfulness, honesty, kindness, politeness are students' knowledge of the principles, methods and mechanisms of objective assessment of knowledge, the ability to effectively apply various forms of control of learning by students. How to take a course at a higher education institution? We pose a question that everyone knows the answer to. Problem statement, search for a solution, attentive listening to answers. What is activism? Why is this necessary? How should the lesson be formed? Activity is a positive state, positive, intellectual and social, encouraging to know society, to defend one's opinion, to be able to express one's opinion, the result of tireless work on oneself, overcoming external and internal feelings, giving pleasure and justification. What is creativity? Why is this necessary? Creativity is a special activity of a teacher, a new method, a new way of thinking. What creativity leads to is a good product, that is, an effect. A creative person is a creative person. What is it leaning towards?- inquisitive, constantly searching, working on himself, independent thinking, original, competent, insightful, rich in intuition, bold, able to express his opinion. What does all this lead to? ... leads to innovation. This is an innovation. The educational process should teach the student to think, find a solution to the problem based on several methods and choose the most important one, be able to feel extreme situations [6].

According to the task in the educational process, learning tools are divided into means of communication (communication) and means of educational work. Academic work is the process of solving a task, a task, tasks, performing various exercises. Educational – communicative (communication) communicative-activity process, which takes into account the educational activities of teachers and students. Communication is coding (in terms of the teacher's speech), transmitting (recording) and receiving information by students (understanding and initial memorization).

**RESULTS AND DISCUSSIONS.** Pedagogical technology has several foundations. The most significant of them are social, philosophical, methodological, didactic, pedagogical, psychological, physiological, hygienic, ideological, legal-normative, economic, historical, theoretical, practical and other foundations. If we summarize the listed pedagogical technologies and other basics, we will get our own theoretical and practical basis for each pedagogical technology. They are determined in accordance with individual goals, objectives, content, form, method, and means.

When teaching the subject of fire safety using distance learning technologies, it is necessary to take into account the state of the ability to correctly perceive and process information flows, requiring the teacher and students to have perfect knowledge of modern computer technology.

It is impossible to imagine a distance learning system without computer technology. Based on the above-mentioned psychological qualities and types of professional activity of specialists studying in the field of occupational safety and health in the conditions of using computer technology when teaching the discipline fire safety, we will consider the following elements of computer literacy necessary for the quality performance of their official duties:

1. Working with the media;
2. Creating a text document for personal use;
3. Creating a text document for use in work;
4. Creating a text document for mass use;
5. Getting information quickly;
6. Obtaining scientific and analytical information;
7. Knowledge of information flows in their activities;
8. Knowledge of scientific and methodological literature in the field of computer technology;
9. Knowledge of the possibilities of using computer technology in their professional activities;
10. The ability to use certain software products in their professional activities;
11. The use of computer technology in the field of self-study.

We have found that the process of teaching fire safety science using distance learning is technically already able to meet the professional needs of future engineers in the field of fire safety, but most electronic learning tools in this regard are not yet ready for this activity. Currently, the science of fire safety is reflected in the curricula without taking into account new distance learning technologies and is determined in all subjects by working with text or graphic paper media. Let's consider the main differences between traditional and distance learning from the point of view of managing the receipt, transmission of information and the formation of knowledge under its influence (see Table 1).

**Table 1**  
**The main differences between distance education and traditional education**

<b>Traditional education</b>	<b>Distance education</b>
The educational process takes place under the control of the teacher, and the educational process can be directed in a certain direction in certain situations.	The educational process is based on a specially designed program, and this program can have many branches depending on the various situations that arise during the educational process.
Often associated with the personal characteristics of the teacher: <ul style="list-style-type: none"> <li>• the ability to arouse interest in the subject being studied;</li> <li>• ability to talk freely with students;</li> <li>• appearance;</li> <li>• facial expressions, gestures;</li> <li>• ability to explain complex concepts in simple terms, etc.</li> </ul>	In many cases, it depends on the content of the information entered by the assistant teacher and the talent of the specialists who developed the curriculum: <ul style="list-style-type: none"> <li>• availability and completeness of the incentive part of the program;</li> <li>• friendly interface;</li> <li>• educational conditions;</li> <li>• development of a support and guidance system;</li> <li>• the ability to search by keyword and quickly get information on other concepts of interest.</li> </ul>
By presenting the topic orally, students acquire the skills to formulate and express their thoughts and knowledge.	A microphone can be attached to the computer, which allows the student to record his report on a certain topic within a certain time, and then both the teacher and the student listen to the report. The student will have the opportunity to hear himself from the outside, to independently understand and correct errors in the presentation.
Forms of control: <ul style="list-style-type: none"> <li>• oral questioning;</li> <li>• write a written answer to the given questions;</li> <li>• control work;</li> <li>• dictation;</li> <li>• check the written assignments given for independent preparation;</li> <li>• conducting a test by distributing leaflets;</li> <li>• oral or written test;</li> <li>• defending the course work;</li> <li>• exam.</li> </ul>	A combination of control and self-control: <ul style="list-style-type: none"> <li>• the curriculum - may include control and self-control parts, midterm test tasks and final tests on sections, and generalized final tests;</li> <li>• the results of the test come out quickly, immediately after completing the tasks;</li> <li>• students can see their mistakes both during the test (such sessions are called training sessions) and after completion</li> <li>• control-training programs provide not only information about the right or wrong answer, but also information necessary to understand the wrongly answered question.</li> </ul>
Classes are held in groups, but individual approach to individual students is not denied. Although students have different levels of perception and physiological characteristics, they, as a rule, study together.	Education is strictly individual Each student works alone with the computer. If there is a large enough base of tasks, tasks may not be duplicated in adjacent workspaces.
The pace of the presentation of a certain topic it is chosen depending on the level of preparation of the listeners and the progress of the process of assimilation of information. However, due to the fixed lesson duration, curriculum and lesson schedule, the pace of the lesson may vary.	Each student determines the pace of the lesson and repetition actions that suit him
The teacher knows the level of preparation of a particular student or group of students and can choose tasks of appropriate complexity for them.	The curriculum can be adapted to the student's level of knowledge. As a starting point for the adaptive part, as a rule, the results of the initial test or the results of the intermediate test tasks carried out by the program before the start of the training serve.
A teacher can have broad and deep knowledge in various fields, skillfully use his knowledge in explaining a certain topic, and give many examples from life related to a specific issue. However, any teacher has a limited level of knowledge due to his individual characteristics and specifics of the subject. It is very difficult to answer a complex	In distance education - the experts who developed the curriculum "have" knowledge entered. Theoretically, the knowledge base of a personal computer (PC) in distance education is limited only to the storage of information. A modern personal computer with a standard configuration can store several thousand or even tens of

question without preliminary training and relevant information.	thousands of books. Unlike humans, computers are not forgetful. An advanced search engine and hyperlinks allow immediate access to information on any topic of study .
Variety of forms of training: • theoretical training (lecture); • conversation; • exhibition; • group training; • seminar (discussion); • independent work; • practical training; (PT) • calculation-drawing work (CDW); • course work (CW) and others.	In the educational system , the customized electronic textbook undoubtedly provides the advantage of independent work, for example, the informative part replaces the lecture; • expanding part - replaces the conversation; • drawings, animation elements, sound parts, video clips included in the curriculum replace exhibitions; • replaces individual training system, control tasks and training sessions- PT, CDW and CW. Internet and related equipment , video conferences and Chat-conferences - replaces seminars and discussions
A teacher can determine the emotional state of students, which is often determined by socio-economic conditions and significantly affects the quality of learning.	As you know, there is no student morale control unit here
The learning process also depends on the emotional state of the teacher, which can significantly affect the state of the audience.	Distance learning has no emotional connection and their work will not be related to the environment.

As can be seen from the above table, information technologies of distance education can successfully take over most of the teacher's tasks and significantly increase the quality of education, while the overall goal does not change. As stated by Colin K.K. in his works: "the problem of informatization of the field of education can no longer be considered only as an instrumental-technological problem, to be more precise, the enrichment of the field of education with informatics equipment and based on them pedagogical cannot be seen only as a problem of creating tools. Today, it is necessary to raise the issue of changing the goals of education, which can turn the problems of the information age in a completely new direction" [ 7 ] .

Based on the general knowledge provided in the field of higher education, the features of modern programs in the distance education system, such as a convenient interface, as well as the selection of programs that meet the requirements of pedagogy, the solutions we offer allow the use of visual aids on the topics of fire safety science and software tools that are considered to be educational goals at the same time.

This approach solves a number of problems: for example, the problem of increasing the visualization of information: due to some specific characteristics, it is impossible to show a number of combustion processes and fire development during training. It allows us to get acquainted and learn about a number of programs used in the field of fire safety.

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