The Use of Information and Communication Innovative Technologies in Higher Professional Education

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Abstract— This article examines the use of information and communication technologies in higher professional education in universities. And it proves the use of information and communication technologies makes it possible for the user to build an individual learning path as conveniently as possible. Computer technologies are designed to become not an additional "makeweight" in training, but an integral part of the integral educational process, which significantly increases its effectiveness.

Keywords—synonym, term, global, modernization, informational, communication, makeweight, presentation, didactic

1. INTRODUCTION

The modern period of the development of society is characterized by a strong influence of computer technologies on it, which penetrate into all spheres of human activity, ensure the spread of information flows in society, forming a global information space. An integral and important part of these processes is the computerization of education. Computer technologies are intended to become not an additional "makeweight" in teaching, but an integral part of the integral educational process, which significantly increases its effectiveness. The problem of widespread use of computer technologies in the field of education in the last decade has caused increased interest in domestic pedagogical science. Information technology is understood as a process that uses a set of means and methods for collecting, processing and transmitting data to obtain information of a new quality about the state of an object, process or phenomenon. In recent years, the term "information technology" is often synonymous with the term "computer technology", as all information technology. [L.1,2].

2. MAIN PART

Currently, the modernization of education in Uzbekistan is being actively carried out, which involves the rapid development of a global information network, the use of distance education technologies, and the provision of educational institutions with information and communication technologies. In this regard, a significant part of Uzbekistan, universities are actively developing and implementing these technologies, which significantly change the nature of the acquisition, development and dissemination of knowledge.

The use of information and communication technologies in higher vocational education has a number of serious advantages over the traditional education system. So, the use of these technologies by students significantly increases the level of accessibility of education, provides students with the opportunity to access the educational and methodological complex of the discipline (UMKD) located on the server. Modern requirements for high-quality EMCD suggest that it includes mandatory components (discipline program, methodological instructions for studying the discipline, questions or tests for self-control, final questions and materials) and additional (textbook, study guide, course of lectures, collection of tasks, manual to practical and laboratory exercises, lecture presentations, video and audio lectures, laboratory and practical exercises). Due to the wide access to the UMKD, students are fully provided with educational, methodological and didactic materials for studying the discipline, each subject has a module. At the Karshi Engineering - Economic Institute, students can refer to the electronic version of the UMKD on the website of the university library. [L.2].

The use of information and communication technologies makes it possible for the user to build an individual learning path as conveniently as possible. the student himself determines the time and sequence of studying the discipline, in addition, students have the opportunity to repeatedly perform laboratory work, carry out practical experiments, which is practically impossible in real learning conditions. An important fact is that the use of information and communication technologies in teaching allows the student to carry out indirect communication with the teacher at a convenient time for himself, using a forum, chat, e-mail. [L.1,2,3].

In addition to the obvious attractiveness for students, the use of these technologies enables the teacher to constantly update the content of education; implement any type of lesson, including control and self-control over the results of students' educational activities. Despite the indisputable advantages of information and communication technologies, their use in most universities in our country has a number of serious problems caused, firstly, by weak resource provision and insufficient material and technical equipment of higher universities, some information in a non-native language, this complicates the study of new modernization technologies at stations; secondly, among students, a weak didactic component of electronic educational resources determines the absence of a technological approach to learning in many distance learning courses, as well as the orientation of the educational process mainly on the reproductive nature of the activity [L.2].

Another of the urgent problems of higher professional education is the low level of information competences of teachers, which does not allow them to actively and effectively use information and communication technologies in the educational process. An important problem is the lack of an integrated assessment system and developed criteria for the quality of electronic educational resources. We see the following most important solutions to these problems. First, there is a need for support and stimulation at the state level of organizations and universities involved in the development and implementation of information and communication technologies in education. Secondly, the development of electronic educational resources should be based on the requirements for a technologically organized learning process. [L.1,2,].

The content of electronic educational resources should be focused on different levels of mastering the academic discipline (reproductive, algorithmic, heuristic, research). Modular training is a way of organizing the educational process based on block-modular presentation of educational information.

The essence of modular training is that the content of training is structured into autonomous organizational and methodological blocks - modules, the content and volume of which can vary depending on didactic goals, profile and level differentiation of students, students' desires for choosing an individual trajectory of movement along the training course. For example, modular distance learning, modules can be mandatory and elective (optional).

The combination of modules should provide the necessary degree of flexibility and freedom in the selection and assembly of the required specific educational material for training (and independent study) of a certain category of students and for the implementation of special didactic and professional goals.

A necessary element of modular training is usually a rating system for assessing knowledge, which assumes a point assessment of students' progress based on the results of each module.

A module is an integral set of skills, knowledge, attitudes and experience (competencies) to be mastered, described in the form of requirements that the student must meet upon completion of the module, and representing an integral part of a more general function. The module is significant for the world of work. Each module is assessed and usually certified.

The modules themselves are formed as a structural unit of the curriculum for the specialty; as an organizational and methodological interdisciplinary structure, in the form of a set of sections from different disciplines, united on a thematic basis by a base; or as an organizational and methodological structural unit within the academic discipline.

How is modular learning different from other learning systems?

The content of training is presented in information blocks, the assimilation of which is carried out in accordance with the goal. The didactic goal is formulated for the student and contains not only an indication of the volume of the studied content, but also the level of its assimilation. In addition, each student receives written advice from the teacher on how to act more rationally, where to find the necessary training material, etc.

The form of communication between the teacher and the student is changing. It is carried out through modules and plus personal one-to-one communication.

The learner learns for a maximum of time self-planning, self-organization, self-control and self-esteem. This makes it possible for him to become aware of himself in activity, to determine the level of assimilation of knowledge himself, to see gaps in his knowledge and skills.

The presence of modules with a printed basis allows the trainer to individualize the work with individual students.

Problem-based modular training provides great opportunities for the development of students, their self-education, involves the gradual formation of professional skills and competencies, the activation of independent educational activities, supported by self-control.

When starting to study a new subject, course, topic, section, it is necessary to present to the learners its entire volume, to show what elements it consists of, how they are interrelated, to indicate interdisciplinary connections, to indicate the depth of study of each educational element, to introduce the procedure for studying the module, clearly formulate what a student should know and be able to do.

When considering topics, interdisciplinary connections with subjects such as materials science, physics, chemistry are given (especially when studying

After studying each topic, a test is passed, and in the lessons of industrial training, students consolidate theoretical knowledge with practical skills and abilities.

Modular technology allows you to integrate and differentiate the content of training by grouping training modules that ensure the development of a course in full, reduced and in-depth versions, the students themselves choose one or another option depending on the level of training; shorten the course of study without much damage to the completeness and depth of mastering it.

Each module has its own structure, reflecting the goal, entry level, planned learning outcomes, including: a clearly formulated task; educational material (in the form of a short or specific text), accompanied by detailed illustrations, visual aids; practical exercises to develop the necessary skills; control work (offset), corresponding to the set goals. For example, having studied this or that electronic device (amplifier, auto-generator, etc.), the student must know its purpose, device, principle of operation, labor safety conditions.

Problem learning is of great importance in modular technology.

The statement of the problem promotes the development of creative thinking and interest in the subject. Problematic questions should be posed at each lesson, which encourages students to solve them independently on the basis of analysis, generalizations, systematization and concretization of knowledge.

The use of the technology of problem-modular learning allows you to build the educational process as a personality-oriented one, on the interaction of a teacher and a student, to increase the activity of students, the effectiveness of the educational process, the coefficient of assimilation of educational material, to develop such qualities as independence, self-confidence, responsibility. [3.4].

The main goal of vocational education is the preparation of a qualified worker of the appropriate level and profile, competent, responsible, fluent in his profession and oriented in related fields of activity, capable of efficient work in his specialty at the level of world standards.

Numerous attempts to "breathe" new life into traditional educational practice have not been crowned with success. The changes taking place in society have given rise to certain problems: on the one hand, there is no demand for graduates of primary vocational education institutions, and on the other hand, the search and optimal use of the conditions and potentialities of vocational education as an educational and production sector for the training of competent specialists.

The problem associated with the insufficiently formed level of information competencies of teachers in higher educational institutions can be resolved through advanced training programs, with the help of university staff who are proficient in information and communication technologies. As for the problem of a comprehensive assessment of electronic educational resources, it must be carried out taking into account the pedagogical and psychological requirements. [L.1,2,3,4].

3. CONCLUSION

1. The solution of the named problems of using information and communication technologies will allow education to reach a qualitatively new level.

2. The use of the technology of problem-modular learning allows to build the educational process as personality-oriented, on the interaction of the teacher and the student, to increase the activity of students, the effectiveness of the educational process, the coefficient of assimilation of educational material, to develop such qualities as independence, self-confidence, responsibility.

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