

Modern Information Technologies in the Educational Process

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Summary

Proficiency in information and communication technologies by university teachers is the basis for improving the quality of education. The use of ICT tools for the creation of educational and methodological support makes it possible to increase the efficiency of the educational process. The competent use of ICT by the teacher increases the pedagogical impact on the formation of the creative potential of the student. To improve the efficiency of using new infocommunication technologies in the educational process, it is necessary to improve the quality of electronic teaching aids and software, for which it is necessary to develop scientific and technical cooperation of universities on this issue. With the accumulation of educational information resources, innovative technologies will take a worthy place in the educational process of the university, and it will become possible to form, on their basis, different levels of training and retraining programs for specialists.

Keywords:

information technology, communication technologies, education system, educational process, ICT competence.

1. Introduction

In the conditions of informatization of education, the importance of information and communication competence of specialists increases. World practice confirms the possibility improving education through widespread introduction of methods and means of information computer technologies. These tasks are of particular importance in the process of training teachers. Information technology in educational process have a significant impact on the formation of a modern information picture of the world. Developed general educational, general cultural and professional skills in working with information, the ability to establish contacts with people; ability to design objects and processes

responsibly to realize their plans is the basis of the information and communication competence of teachers.

The relevance of the use of information technologies in the educational process at the university is due to the social need to improve the quality of education and practical need for the use of modern computer programs in higher educational institutions. Modernization of the educational process requires a transition from passive, mainly lecture, methods of mastering the educational material, to active group and individual forms of work, the organization of students' independent search activity, which will allow you to train a specialist with a pronounced individuality and organize the activities of those involved in different conditions.

This, in our opinion, can be facilitated by introduction into the educational process of information computer technologies and digital educational resources. Knowledge of information and communication technologies (ICT) by university teachers is the basis for improving the quality of education. Use of funds ICT for the creation of educational and methodological support makes it possible to increase the efficiency of the educational process. The competent use of ICT by the teacher increases the pedagogical impact on the formation the creativity of the student.

The inclusion of multimedia educational materials, new information and telecommunication technologies in the educational process allows: materials not only in printed form, but also in graphic, sound, animated form, which gives many students a real opportunity to master the material at a higher level; automate the system of control, assessment and correction of students' knowledge; automate the process of assimilation, consolidation and application educational material taking into account interactivity many electronic teaching aids; to differentiate and individualize training; significantly increase interest in disciplines, which also determines the quality of

education; access and operate a large amount of information; shape information culture, including teaching students to find and use various types of information, which is one of the most important skills in the modern world; organize extracurricular work; provide distance learning opportunities for those who need it [1].

At the same time, in the implementation of information and computer technologies in the educational process has certain difficulties and problems. For example: an increase in the annual need for finance Use of modern information technologies in the educational process development of the informatization process in connection with the need to equip educational institutions of modern computer technology, interactive equipment, providing modern software means and access to information Internet resources, etc.; insufficient attention on the part of municipal educational authorities to the organization of local computer networks, the provision of telephone lines; limited selection of required software for organizing the educational process and management activities in education; inconsistency communication lines in some rural areas telecommunications requirements for connecting to the Internet using broadband access technology; the unpreparedness of some of the teaching staff to introduce ICT into the practice of the educational process, etc.

The main strategic task of informatization of education is to provide the participants of the pedagogical process with new, real possibilities of exercising the right to choose sources, conditions and forms of education in a specially created environment.

The need to introduce new information technologies in education is also caused by the fact that the volume of educational and scientific and technical information is constantly growing, the number of academic hours allocated for its study remains constant, and often decreases.

The introduction of information technology involves the continuous use of computer technology in the educational process for the following main areas:

- increasing the efficiency of the process of assimilation and accumulation of knowledge, the formation of skills and abilities to solve typical problems and apply them in typical situations;

- conducting scientific research.

The experience of using electronic textbooks shows that students' interest in the subject increases, attendance increases, everyone actively works in the classroom. This contributes to the intensification of the learning process and the effective assimilation of the educational material, since each training course contains a minimum of necessary information and a large number of questions, comments and explanations for the answers.

A university teacher is a scientist and teacher as a

specialist in a certain area of knowledge, during the educational process, industrial practice, coursework and diploma design, demonstrates to students a creative attitude to professional activity. If at the same time he uses ICT competently, then his pedagogical influence on the formation of the student's creative potential increases many times over.

So, let's define the starting points of the information competence development process. It:

- motivation, need and interest in acquiring knowledge, skills and abilities in the field of hardware, software and informatization;
- a set of social, natural and technical knowledge, reflecting the system of modern information society;
- knowledge that constitutes the informative basis of the search cognitive activity;
- methods and actions that determine the operational basis of the search cognitive activity;
- experience in search activities in the field of software and technical resources;
- experience of the relationship "person - computer".

In this regard, it is necessary:

- 1) determine the necessary and clear general goals and specific learning objectives;
- 2) select software and hardware that meet these goals and objectives;
- 3) to carry out the optimal selection of topics and distribution of material within the time allocated for training;
- 4) develop didactic tools and techniques that allow reproducing in the educational process the procedure for analyzing a software product at different levels of problematization;
- 5) have available methodological developments and handouts with tasks corresponding to the specialty of the trainees;
- 6) prepare a list of appropriate teaching methods and model teaching activities in accordance with the objectives and goals;
- 7) to develop a system of tasks that allows students to form the experience of analyzing software tools for the implementation of the set problems;
- 8) provide for a variety of types of teaching activities, taking into account the level of training of students;
- 9) allocate time for monitoring and evaluating work in each lesson at the end of the course;
- 10) as necessary, provide homework for the development of lecture topics and topics for independent consideration;
- 11) it is clear to formulate what the trainees will know and what they will be able to.

Thus, the effectiveness of the educational process in the context of the informatization of the higher professional education system depends on the teacher's ICT competence, which includes not only use of ICT directly

in the educational process, but also in the development of educational and methodological materials. The creation of a database of educational and methodological materials will allow to intensify the processes of independent work of students.

Training of pedagogical personnel using information computer technologies at the level of candidates and doctors of sciences seems to be one of the most urgent tasks of today.

To ensure the quality of the educational process, teachers must be specialists in their field, meet the general requirements for teachers of computer science, complete a basic training course, develop their own original methodology and use it in the learning process [3]. Thus, the use of information technology in the educational process in different options allows us to talk about certain advantages of such forms of organizing the educational process:

- a fundamentally new organization of students' independent work becomes possible;
- the intensity of the educational process increases;
- students have additional motivation for cognitive activity;
- availability of training materials at any time;
- the possibility of self-control of the degree of mastering the material on each topic an unlimited number of times.

To increase the efficiency of the use of new infocommunication technologies in the educational process, it is necessary to improve the quality of electronic teaching aids and software, for which it is necessary to develop scientific and technical cooperation of universities on this issue. With the accumulation of educational information resources, innovative technologies will take a worthy place in the educational process of the university, and it will become possible to form, on their basis, different levels of training and retraining programs for specialists.

Today, in the age of information technology, almost everyone knows how to work on a computer. The computer in our time has become a new tool, an instrument of human activity, but each time the user, working in

The Internet is facing difficulties. This is advertising, a lot of useless information or too extensive selection of information, again not always reliable.

Internet technologies are communication, information and other technologies and services, based on which activities are carried out on the Internet or with the help of it.

The orientation towards independent acquisition of knowledge by students, towards their self-education and self-knowledge becomes natural in the educational process.

The use of information and computer technologies opens

up new opportunities for the teacher in teaching his subject. Studying any discipline using Web technologies gives students an opportunity for reflection and participation in the creation of the elements of the lesson, which contributes to the development of students' interest in the subject. Teaching, due to its peculiarities, is a favorable area for the use of modern information technologies [1-3, 5, 6].

Information technologies are used by me both in conducting lessons and in organizing extracurricular activities of students.

The effectiveness of the use of ESM is closely related to the methods using interactive models. Interactive models can simply be used to demonstrate a physical process, phenomenon, or can be used to conduct interactive experiments.

Working with electronic educational resources easily fits into a traditional lesson and allows the teacher to organize new types of educational activities [7,9].

The introduction of Web technologies in the educational process is designed to increase the efficiency of the lessons, enhance the attractiveness of the presentation of the material (viewing various experiences, observations, experiments, conducting laboratory work online), differentiate the types of tasks, and diversify the feedback forms.

2. Theoretical Consideration

The definition of urgent tasks in modern education are:

- motivation (students do not always understand why certain particular questions are being studied);
- an individual approach that takes into account the interests and abilities of students (for some students, the physics course turns out to be too difficult, and for others, on the contrary, it is easy and uninteresting);
- the use of innovative technologies, project activities in teaching subjects of the natural and mathematical cycle;
- conscious application of the knowledge gained in physics lessons, abilities, skills that allow students to be ready for adequate actions, to predict and evaluate various processes, to use the achievements of science in order to rationalize labor and increase its productivity.

The use of information technology in the classroom is also in the following areas:

- Multimedia scripts of lessons or fragments of lessons;
- preparation of didactic materials for lessons;
- use of ready-made software products according to your discipline;
- search for the necessary information on the Internet in preparation for lessons and extracurricular activities;
- search for the necessary information on the Internet directly in the lesson;
- work in the lesson with materials from Web sites;

- development of tests using ready-made shell programs;
- the use of computer simulators for the organization of knowledge control [8-10].

With the help of a computer, it is convenient to implement the principle of clarity in teaching. Models of various phenomena have been compiled in programming languages.

This is no longer just a picture, as it was ten years ago. The presentation of educational material, lectures can always be accompanied by materials from ready-made software tools. These are videos, presentations, demonstration experiments. To maintain the interest and development of students' cognitive activity, it is necessary to expand the number of creative and research works carried out using ICT; use material with content when carrying out practical work in the classroom informatics; conduct a week of subject and computer science, in which students will be able to submit to the competition and defend their creative and research work done with the use of ICT [7,8].

Information technologies in teaching practice contribute to the creative and moral development of the student's personality and carry out personality-oriented communication between the teacher and each student. The use of a computer in teaching is not limited to lessons; independent work with the training program plays an important role here. The student develops an interested attitude to the studied material, belief in one's own strengths and abilities. The introduction of students' 'project work methods into practice contributes to the development of students' skills of productive joint work to achieve a common goal, creates the prerequisites for integrating the study of informatics with the development of the subject content of other general education disciplines [5,10].

The systematic use of information technology tools introduces students to modern teaching methods and prepares them for intellectual activity in the information society. The widespread use of the Internet in the learning process not only helps teachers and students to accumulate, systematize knowledge, exchange them, but also allows you to cross borders and time zones, makes you think in a new way. Interaction of teacher with students through computer networks, interactive interaction is a new specific form of education. For a gifted and inquisitive student, this is an opportunity to engage in self-education. For a teacher, this is an opportunity to improve their qualifications. The use of information technologies in the educational process allows teachers to make the educational process more intense, vivid and effective[9, 12, 13]. Analyzing the experience of using ICT in the classroom, we were convinced that this allows us to develop the cognitive activity of students with a high degree of efficiency, increase interest in the subject under study, develop analytical thinking, form and improve computer skills, form teamwork and independent research skills.

3. Conclusions

Thus, a short and specific methodology should be developed for everything related to the creation, search, acquisition, use and updating of electronic education resources. Thus, the use and implementation of ICT plays a large role in the professional development of teachers, increases their information competence. The very role of the teacher in the class is changing: from the teacher - the source information, there is a transition to the teacher-consultant, co-author of student discoveries. The graduate will have to live in a world in which the ability to use ICT will largely determine his life success, and you can really learn to use ICT only by actively using them in the educational process, so that every graduate of the university is successful in modern conditions: he can find and realize himself in the best way.

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