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PEDAGOGICAL CONDITIONS OF MEDIA CULTURE DEVELOPMENT OF FUTURE ENGINEER-EDUCATORS IN THE CONDITIONS OF EDUCATION INFORMATION

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Abstract. This article discusses the stages of education informatization, the main pedagogical goals and tasks of using modern information technologies, as well as the pedagogical conditions for the development of media culture of future engineer-pedagogues.

Key words: information, technology, media, engineer-pedagogue, multimedia, computer, telecommunication, technique, integration.

Informatization of education is one of the most important conditions for the successful development of the processes of informatization of society. After all, in the field of education, people who not only shape the new information environment of the society, but also live and work in this new environment are trained and educated. Informatization of society is a set of interrelated political, socio-economic, scientific factors that provide free access to any information sources, except for legally confidential ones.[1]

The first stage of informatization of education (electronicization) is characterized by the wide introduction of first technical, then humanitarian sciences and electronic tools and computers to the process of training students. He offered to teach the basics of algorithmic and programming, elements of logic algebra, mathematical modeling on a computer. The relatively low productivity of computers at that time, the lack of a convenient, intuitive and user-friendly software interface did not help the widespread use of computer technologies in the field of humanitarian education.

The second stage of informatization of education is associated with the emergence of more powerful computers, software with a friendly interface, and is primarily characterized by the use of human-computer interaction. Computer educational technologies made it possible to study various processes and phenomena based on modeling. Computer technology has begun to act as a part of automated systems at various levels, as well as a powerful teaching tool. In the field of education, automated systems of education, control of knowledge and management of the educational process are increasingly used.

[1] Uskov, Vladimir L., Robert J. Howlett, and Lakhmi C. Jain, eds. Smart education and smart e-learning. Vol. 41. Berlin-Heidelberg, Germany: Springer, 2015.

The third, modern stage of educational informatization is characterized by the use of powerful personal computers, high-speed high-capacity storage devices, new information and telecommunication technologies, multimedia technologies and virtual reality, as well as a philosophical understanding of the ongoing process.

Informatization of education is the process of providing the educational system with the theory and practice of developing new information technologies aimed at the implementation of educational and educational goals. In turn, it is natural to single out the following main directions of introduction of information technologies in education:

1) using computer technologies as a teaching tool, improving the teaching process, increasing its quality and efficiency;

2) using computer technology as a teaching tool, knowing oneself and the truth;

3) consideration of computers and other modern information technology tools as objects of study;

4) to use of new information technologies as a means of creative development of the student;

5) to use of computer technologies as a means of automation of control, correction, testing and psychodiagnostic processes;

6) organization of communications based on the use of information technologies in order to transfer and acquire pedagogical experience, methodological and educational literature;

7) to use of modern information technologies to organize intellectual recreation;

8) activation and improvement of management of the educational institution and educational process based on the use of modern information technology systems.

The most important tasks of educational informatization are as follows:

– to increase the quality of training of specialists by using modern information technologies in the educational process;

– to use active methods of teaching, increase the creative and intellectual components of educational activities;

– integration of various types of educational activities (study, research, etc.);

– adaptation of teaching information technologies to the individual characteristics of the student;

– development of new educational information technologies that contribute to the activation of the listener's cognitive activity and increase his motivation to master informatics tools and methods for effective use in professional activity;

– ensuring continuity and consistency in education;

– development of information technologies for distance education;

– improvement of programmatic and methodical support of educational process;

– introduction of information technology training in the process of special professional training of specialists in various fields.

One of the most important tasks of informatization of education is to develop the information culture of a specialist, the degree of its formation is primarily determined by his knowledge of information processes, models and technologies; secondly, skills and abilities to use tools and methods of information processing and analysis in various activities; thirdly, the ability

to use modern IT in professional activities; fourth, the worldview of the surrounding world as an open information system.

Another task of informatization of education is the establishment of a single informational educational space. The process of informatization of education includes the following system of activities:

1) equipping educational institutions and educational management bodies with technical and software support of information technologies;

2) connection to regional, national and international computer education networks, global Internet network through high-speed channels;

3) creation and deployment of educational information resources on the Internet, various regional and state databases: educational portals, official sites of educational institutions and state bodies, thematic resources, methodological sites, electronic libraries, information - integration of search and analytical systems, etc.;

4) development, examination, testing and introduction of educational programs, including digital educational resources;

5) development of information culture of all participants of the educational process: employees, teachers, students;

6) creating a system of technical maintenance and service of information technology tools in educational institutions and management bodies;

7) creating a system of continuous training of teachers in information technologies (courses, express courses, mini-seminars, regular seminars, conferences, competitions, solving pedagogical problems, individual counseling system, problem and creative group work); self-education, professional communication, etc.). Several stages of this process are described in the concept of educational informatization.

Stage 1 is characterized by the following features:

– begins mass introduction of new information technologies, primarily computers;

– scientific-research works on the pedagogical development of computer technology are being carried out and ways of using it to activate the educational process are being sought;

– society goes on the path of understanding the essence and necessity of information processes;

– initial training in the field of information technologies is carried out at all stages of continuous education.

Stage 2 is characterized by the following features:

– active development and introduction of tools to traditional educational subjects;

– mastering new methods and organizational forms of work by teachers using computer technologies;

– the beginning of the active development of teaching-methodical support by teachers;

– description of the problem of revising the content, traditional forms and methods of education and training.

Stage 3 is characterized by the following features:

– extensive use of modern IT tools in personnel training;

– reconstruction of the content of all stages of continuous education based on its information;

– to change the methodological foundations of teaching and to develop a wide range of teaching methods and organizational forms provided by each teacher with the appropriate tools of modern information technologies.

Implementation of computer technologies and the transition to the next stages of informatization is related to the selection of the content of individual subjects for the creation of computer programs. The software should reflect the current curriculum. Thus, one of the leading scientific-methodical problems in this case is the creation of a methodology for the design of modern information technologies used in education.

As you can see, each era of educational informatization has two parallel branches of development: the technological basis and innovative processes in the educational system itself. Considering the huge influence of modern information technologies on the educational process, many pedagogues are more ready to include them in their methodological system. However, the process of informatization of education cannot happen instantly, according to any reform, it is gradual and continuous. The functional characteristics of modern information technologies ensure the implementation of many opportunities that help to improve the quality of education in the educational process. Foreign scientists who study the processes of informatization of education make many assessments of the possibilities of information technologies.

Defines the following main pedagogical goals of using modern information technologies:[2]

Activation of all stages of the educational process by using modern information technologies:

– increasing the efficiency and quality of the educational process;
– increasing the activity of cognitive activity;
– deepening of interdisciplinary relations;
– increasing and optimizing the search volume of the necessary information.

2. Development of a student's personality, preparation of a person for a comfortable life in the information society:

– development of different types of thinking;
– development of communication skills;
– formation of the skills to make the best decision or offer a solution in a difficult situation;
– aesthetic education through the use of computer graphics, multimedia technology;
– formation of information culture, ability to process information;

[2] Robert, I.V. “Theory and methodology of informatization of education (psychological, pedagogical and technological aspects)”. IIO RAO. M.:-2007 18 (2014).

– developing the skills of imitating a task or situation;
– formation of skills to carry out experimental research activities.

3. Work aimed at fulfilling the social order of society:
– training of an information literate person;
– providing the user with computer tools;
– implementation of vocational guidance in the field of informatics.

V.A. Krasilnikova[3] completed the above goals with another important aspect for the pedagogical process - improving the informational and methodological support of pedagogical activity:
– significantly expand the information and methodical provision of teachers and students;
– expansion of communication and cooperation opportunities based on computer communications;
– providing opportunities for continuous professional development and retraining, regardless of age, geography and time of residence;
– creation of a unified information-educational environment based on the active use of computer networks of different levels (global, corporate, local).

E. I. Mashbits considers the following as a set of important advantages of using a computer in teaching compared to traditional classes:[4]

1. Information technologies significantly expand the possibilities of providing educational information. The use of all modern means of color, graphics, sound, video technology allows to recreate a real activity environment.
2. The computer can significantly increase students' enthusiasm for learning. Motivation is increased by using sufficient incentives to solve the problem correctly.
3. Information technologies involve students in the educational process, contribute to the maximum development of their abilities and increase mental activity.
4. The use of information technologies in the educational process increases the

possibilities of setting educational tasks and managing the process of solving them. Computers allow to build and analyze models of various objects, situations, events.

5. Information technologies allow to qualitatively change the control of student activities while providing flexibility in managing the educational process.
6. The computer helps students to form reflection. The training program allows students to imagine the result of their actions, to determine the stage of solving the problem where the error was made and to correct it.

The listed possibilities of the computer help to identify and develop the student's abilities, to

[3] Krasilnikova, V.A. “The use of information and communication technologies in education”. Orenburg: OSU 26 (2012): 291.
[4] Mashbits E.I. Psikhologo-pedagogicheskieproblemycomputerizatsiiobucheniya [Psychological and pedagogical problems of computerization of education], Moscow: Pedagogika Publ., 1988. 192-p.

form skills and the desire to learn, and to create conditions for mastering knowledge. Thus, there are several aspects of information technology:

I. Motivational aspect. The use of information technologies helps to increase students' interest and form positive motivation:

– maximum consideration of individual educational opportunities and needs of students;
– a wide choice of content, forms, speed and levels of training sessions;
– revealing the creative potential of students;
– assimilation of modern information technologies by students.

II. Content aspect. Information technology opportunities can be used as follows:

– in the creation of interactive aspects and other digital educational resources on some subjects and sections of the educational science;
– when creating individual test mini-lessons;
– in creating simulators for interactive homework and independent work of students.

III. Educational and methodological aspect. Information technologies can be used as educational and methodological support of the educational process. The teacher uses various educational tools at all stages of the training. In addition, the teacher can use a variety of digital learning resources to design in-class and extra-curricular activities.

In connection with the above, the main directions of using information technologies can be distinguished:

1. Computer and information technology as a learning object (information technology course).
2. To use of information technologies as a means of teaching various subjects as a means of supporting science classes and other types of activities.
3. Computer and AI as a means of development and education.
4. Information technology as a tool for diagnosing various functional systems of education.

As a result of the analysis of scientific-theoretical literature, pedagogical observations, and comparative analysis, it was concluded that it is appropriate to develop the media culture of future engineer-pedagogues based on the following principles:

– **cultural compatibility** - taking into account the existing culture and conditions in the society and the characteristics of the national mentality in the education and upbringing of the student;
– **semiotics** - sign-symbolic systems make the thinking process more effective, require compliance with the statistical and dynamic norms of the subject of its perception;
– **freedom of information consumption** - allows students to ensure freedom of information consumption, pays attention to learning the language of the media;
– **subjectivity** - relying on the student's personal experience, his active actions, his initiative and independence in learning;
– **activity** - creating real conditions for involving students in media-education activities, improving pedagogical interaction;
– **creativity** - development of its creative activity in the process of creating a media product;

– **humanization** - paying attention to the personality of the student, treating him with respect and benevolence, creating favorable conditions for the development of his creative individuality;

– **integration** - observing many integrative processes, "thinking outside the shell", providing favorable pedagogical conditions for the development of media culture;

– **the principle of creativity and success** - allows to determine and develop the individual characteristics of the student, as well as to develop his abilities and self-improvement.

Thus, the introduction of modern information technologies into the field of education allowed teachers to qualitatively change the content, methods and organizational forms of education. The goal of developing the media culture of future engineers-pedagogues in the conditions of informatization of education is to increase the intellectual capabilities of students, as well as to humanize, individualize, intensify and increase the quality of education at all stages of the educational system.

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