

INFORMATION TECHNOLOGIES IN EDUCATION: OPPORTUNITIES AND NEGATIVE CONSEQUENCES

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Abstract

The article discusses the impact of information education on the development of society. The article discusses the main problems and prospects of education informatization.

In the information society, information technology occupies a special place. The use of information technology in the educational process significantly increases its effectiveness. Determined that the informatization of education is characterized by the use of computer-oriented teaching systems at different stages of training in higher and secondary schools, teaching the use of information technologies, which are, in turn, the procedural component of the computer-oriented educational systems. However, there are a number of problems complicating the process of informatization of education.

Keywords. Education, information society, informatization, computer, information technology, distance education.

ІНФОРМАЦІЙНІ ТЕХНОЛОГІЇ В ОСВІТІ: МОЖЛИВОСТІ І НЕГАТИВНІ НАСЛІДКИ

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Анотація. У статті розглядається вплив інформаційної освіти на розвиток суспільства. У статті розглядаються основні проблеми та перспективи інформатизації освіти. В інформаційному суспільстві інформаційні технології займають особливе місце. Використання інформаційних технологій в освітньому процесі істотно підвищує його ефективність. Визначено, що інформатизація освіти характеризується застосуванням комп'ютерно-орієнтованих методичних систем на різних стадіях навчання у вищих і загальноосвітніх навчальних закладах, використанням навчальних інформаційних технологій, які є, в свою чергу, процесуальною складовою комп'ютерно-орієнтованих освітніх систем. Однак існує цілий ряд проблем, що ускладнюють процес інформатизації освіти.

Ключові слова. освіта, інформаційне суспільство, інформатизація, комп'ютер, інформаційні технології, дистанційна освіта.

Statement of the problem. A distinctive feature of the modern era is accelerating every year the pace of development of new information technologies. Society enters the phase of informatization. Today, the process of informatization in our country has reached such a level that its influence changes the social system and social structure: conditions are created for intensive, purposeful use of information technologies in public life, a whole series of measures are being implemented for informatization of social infrastructure within state and regional projects, priority government programs, information legislation. The active use of information technology increases the efficiency of the learning process, since the educational process becomes more flexible, intensive, provides an individual approach; learners can more productively engage in self-preparation for training activities, mastering the studied and obtaining additional educational material, securing the necessary skills and abilities; teachers and students can more effectively engage in research activities; teachers and educational

institutions have the opportunity to improve the teaching process, the exchange of advanced educational experience [2].

Analysis of recent research and publications. The problem of the wide use of information technologies in the field of education in the last decade is of great interest in the national pedagogical science.

Classics of scientific informatics, originating from cybernetics and mathematics, were scientists A.I Berg, A.P Ershov, A.N Kolmogorov, P. Landa, S.A Lebedev, N. Viner, D. Neiman, S. Peiper, K. Shannon and others.

A great contribution to the study of the processes of informatization of education and the solution of the problem of computer technology training was made by scientists: Y.A. Vagramenko, V.I Gritsenko, B.S Gershunsky, D.V Zaretsky, V.M Monakhov, O.A. Krivosheev, S.Paipert, G.Kleiman, B.Sendov, B.Hanter and others.

The purpose of work - to reveal the possibilities of effective use of information technology in education.

Basic material. Informatization of education (from the Latin informatio - Presentation) process to ensure education methodology and practice of designing and calculating the best use of modern information technology, focused on the implementation of psycho-pedagogical purposes training. This process initiates, firstly, the improvement of educational system management mechanisms based on the use of automated data banks of scientific and educational information, information and methodological materials, as well as communication networks; secondly, the improvement of the methodology and strategy of selecting the content, methods and organizational forms of training and education, corresponding to the tasks of the development of the personality of the learner in the modern conditions of informatization of society; thirdly, the creation of methodical training systems focused on the development of the student's intellectual potential, on the formation of skills to independently acquire knowledge, to carry out information and training, experimental research activities, various types of independent information processing activities; fourthly, the creation and use of computer testing, diagnosing methods of monitoring and assessing the level of knowledge of students.

In the narrow sense of the informatization of education - the introduction of the institution of education system information means based on microprocessor technology, as well as information products and educational technologies based on these funds.

Information education - part of the process of the information society, which is usually associated with the "information explosion"(S. Lem). Its essence consists in the exponential

growth of the amount of socially significant information (scientific, technological, cultural, etc.).

The theoretical basis of informatization of education is, first of all, informatics, then cybernetics, systems theory and, of course, didactics. Informatics, as is known, is a branch of knowledge that studies the production, processing, storage and dissemination of information in nature, society, and the technosphere.

Informatization of education, due to global changes and, above all, the emergence and development of the information society, allows to solve the main task - improving the quality of education through the use of modern information technologies. The formation in the educational process of working with electronic means of processing and transmitting information contributes to the satisfaction of information needs, the development of creative and intellectual potential of students and the adequate use of information resources in various spheres of human activity. It provides training for the subjects of the educational process to the ability to live in the information society, where more than half of the jobs involves the use of computers and the Internet.

Discussing the possibilities of informatization of education, we note:

1. The possibility of a systematic approach to the organization of the educational process on the basis of the structural and logical presentation of educational material, which allows to set the content in the form of a system of interconnected modules, to actually determine the approximate basis of the educational activities for mastering this content.

2. The flexibility and openness of the educational process in relation to social and cultural differences between students, their individual styles, pace of learning, their interests, allowing to increase the efficiency of the educational process on the basis of its individualization and intensification.

3. The opportunity to intensify the educational process on the basis of a multimedia form of the presentation of educational material, a partial reduction in the note-taking of the text by receiving it in electronic form.

4. The possibility of organizing interactive learning, built on the interaction of the student with the learning environment, which is the area of experience mastered in the context of the realization of his subject position.

5. Competence-oriented educational process on the basis of a unified methodology for the application of information technology, allowing to integrate educational, research, independent and other activities of students. This determines the formation of

students' competence in the use of information technology in the structure of professional competence, generally contributes to the competitiveness of high school graduates.

6. Formation of the system of continuous education, education "through life", aimed at the continuous development of the individual in a single information space.

7. The electronic form of teaching materials (curricula, programs, textbooks, lecture notes, guidelines, recommendations, etc.) allows the student to have an information environment that contributes to the organization of independent work on the assimilation of educational information at an individual pace at a convenient time.

8. The possibility of visualizing the content of the discipline, demonstration of the phenomena and processes in development and dynamics.

Particular importance is the ability to update the implementation of one of the most important didactic principles - clarity of principle.

The traditional system that implements the verbal-logical method of teaching, little relies on the visibility of educational material in the educational process. Orientation to the development of the intellectual sphere of students and the possibility of new tools and information technologies makes it necessary and appropriate to visualize the content of the disciplines, to make it visual.

Informatization of education is characterized by the use of computer-oriented methodological systems at different stages of education in higher and general educational institutions, using educational information technologies, which, in turn, are the procedural component of computer-oriented educational systems. Relying on research [5], informatization of education will be understood as the process of providing the education sector with the theory and practice of developing and using modern information technologies oriented towards the realization of the psychological and pedagogical goals of training and education, fundamentally new educational results demanded by modern society.

Penetration into the formation of new information technologies makes us look at the didactic process as an information process in which students receive information, process it and use it. Programmed instruction and followed by education technology show that the doctrine, which is understood as a process of information processing, it may be strictly controllable, like the processes in complex systems, which is engaged in cybernetics. Therefore, informatization of education should be viewed not just as the use of computer and other electronic means in education, but as a new approach to the organization of education, as a direction in science, which scientists call pedagogical informatics. Informational approach to training poses didactics and pedagogy in general to a number of problems.

For example, the question of the forms of representation of knowledge in the educational process, refers to the traditional texts, visual materials, and new forms that are created along the lines of information: the text is divided into blocks, or otherwise structured, thesaurus, frame, concepts, tree (something like graphs in computer science), hypertext and others. In turn, forms of knowledge representation determine the search for means of their presentation in the didactic process and methods for processing information, that is, teaching and cognitive operations, teaching and teaching methods. But these and other issues are the main issues of didactics.

In addition, there are a number of general pedagogical and socio-pedagogical problems or aspects of education informatization. The term "visual education" has appeared, which means that in teaching the image, image, models, signs will play an increasing role, pushing aside the usual texts. Working with signs and sign systems, transferring from one sign system to another, encoding and decoding - these and other procedures should be able to be done by people of the information society. In this regard, the question arises about the information culture of the individual, by which we understand the availability of knowledge in the field of information and the ability to work with information. The information culture of the individual, scientists believe, must be shaped at school. Therefore, in the second half of the XX century in pedagogy formed direction - media education, which explores the question of studying the students of mass communication. The main tasks of media education, scientists understand as follows: to prepare schoolchildren for life in the information society, to form their ability to use information in various forms, to master ways of communicating using information technologies and means, that is, to communicate, to realize the consequences of human exposure to the media, in particular the media. In schools of developed countries, a special subject is being studied, designed to solve these problems. Its content is approximately as follows: the concept of communication, sign systems, the presentation of information, the media of mass communication. In recent years, computer literacy has been added to this, which gives the title of the subject "Basics of computer and media literacy".

At present,, the procedure for the implementation and application of information technologies in education significantly inhibited in Ukraine and implemented unevenly due to a number of problems, study and classification of which are very important from the point of view of the need for their effective solutions. The main difficulties in the process of informatization of the educational environment include:

1) increasing social inequality, since the purchase of expensive equipment is not available to everyone;

2) the threat of diminishing the importance of oral and written speech, since in the newest developments sound and image dominate;

3) inaction in the process of mastering the data, as the programmers have a desire to make their material ordinary and not requiring much effort;

4) the threat of reducing the level of socialization of the individual, i.e. a sudden decrease in the time of presence among other people and communication with them, visits to social and cultural events, theaters, museums [3].

The important problems of the introduction of information and communication technologies in the educational sphere, which, according to some researchers, limit the modernization of national education, can also be attributed to:

1) the lack of preparation of teachers for the informatization of education: both psychological and due to insufficient knowledge of information technologies;

2) lack of methodological materials on the application of information and communication technologies in the educational process;

3) low level of provision of educational institutions with modern equipment, including multimedia;

4) lack of specialists, holding the same training techniques, computer and multimedia technologies at a level that allows considered a leader in the team; specialists able to attract the staff to the introduction of information technology in the educational sphere [1].

Thus, the increasingly active use of information technologies in the educational process is associated with a number of negative consequences, including: - the lack of “live” communication and, as a result, possible difficulties in the subsequent socialization and professional activities: problems of forming the skills of formulating and expressing one’s thoughts, conducting a dialogue, etc .; - the presence on the Internet of a huge array of ready-made works (reports, essays, term papers and examinations, diplomas, projects, reshebnik, etc.) reduces the effectiveness of training and education of students; a surplus of information, often presented haphazardly, including inaccurate and outdated information, can distract attention from studies, reduce the motivation and interest of students, cause information overload and, as a result, health problems, especially mental ones [2]. However, it becomes obvious that the formation of the education system will be inextricably with the informatization of the whole society. The reality now is that regularly increases the need for new developments in the field of information technology and in education. That is why

special attention should be paid to promising trends and forms of education using information technologies. For example, the concepts of mobile learning (m-learning) and mobile testing, for example, in the form of SMS testing, are becoming increasingly popular. The increase in the number of pocket personal computers, smartphones, tablets and other wireless devices rightly leads to the need to use mobile communications in training. Continue to improve these types of latest information technologies, such as television and video conferencing. The teleconference enables the teacher and students, who are at a distance from each other, to carry out an educational process that is close to the traditional, to organize group activities of students who are in different localities, to use business games, brainstorming, etc. in the educational process. All of the above is possible due to implementation of a virtual classroom based on teleconferencing, which is one of the types of distance learning [3].

According to a number of specialists, distance learning is a more advanced educational technology in comparison with distance learning [1; 3]. Keeping the main advantages of distance education - the ability to study at home, at a comfortable time and regardless of where you live, - distance learning has great flexibility and interactivity. At that time, as a correspondence course work according to the schedule, distance learning course can begin at any time on request of the student, training periods have been established specifically, and the student chooses the suitable pace of work. A remote teacher is always available via e-mail and is ready to give answers to all kinds of questions that a student has. At the same time, the active use of the Internet and information technologies in the course of the educational process requires the formation of new electronic educational materials, the restructuring of the content and organizational forms of educational activities and the retraining of teaching staff.

Conclusions. Thus, in modern conditions, information technologies act as technical means for resolving major issues in the period of development of new socio-economic conditions of society. Despite the constant development of forms and methods of informatization of education, this process is fraught with a number of problems, the solution of which requires the active participation of the state and all participants in the educational process.

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