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Information Technology of Teaching Economics Disciplines in an Interactive Software Environment

Abstract. *Introduction. The latest information technologies (IT), modern forms and methods of higher education are considered, which create prerequisites for intensifying the introduction of computer technology in the educational process of higher education, which allows to solve a number of pressing issues facing it in modern conditions: to increase the information culture of the future specialist, to make available to him the world's information resources and to strengthen the information content of the entire educational process in higher education institutions of the country.*

The main means of implementing information and communication technologies in education are the so-called creative technologies - computer graphics, hypertext, electronic textbooks, GIS - technology, virtual reality, computer networks. The use of information and communication technologies in the process of training future professionals has a number of advantages - the ability to control the pace of educational activities, choose the level of complexity of tasks, the ability to clearly demonstrate certain phenomena and others. Along with the positive aspects of computerization of training of young professionals, there are negative ones, the main of which are disregard for the requirements and motives of personal activities of students, the inability to perform the educational function of control, the difficulty of determining the depth of students' knowledge. Therefore, it is recommended to find the optimal ratio in the use of computer and traditional technologies in higher education. The proposed model of preparation of the future specialist for professional activity with the use of computer technology includes goals, principles, content, ways and means, form and general purpose. Such changes in the organization of educational process will allow to form at future experts components of information culture necessary for the modern person.

Purpose. *Analysis of the practical significance of computer technology in the educational process and building a model of the use of computer technology in the training of specialists in economic specialties.*

Results. *Analysis of scientific works on the introduction of compute technology in the educational process of higher education institutions. The formed model of preparation of the specialist for professional activity with use of computer technologies, presented on fig. 1, has the specificity as it is connected with transition from traditional didactic system of training – «teacher-student», «student-student», to new systems «teacher-computer-student», «computer-student» and «tudent-computer-student».*

Conclusions. *The main means of implementing information and communication technologies in education are the so-called creative technologies - computer graphics, hypertext, electronic textbooks, GIS - technology, virtual reality, computer networks. The use of information and communication technologies in the process of training future professionals has a number of advantages - the ability to control the pace of educational activities, choose the level of complexity of tasks, the ability to clearly demonstrate certain phenomena and others.*

Keywords: *computer technology; model; multimedia technologies; information technology; future specialists; students; high school; hypertext.*

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Інформаційні технології викладання економічних дисциплін в інтерактивному програмному середовищі

Розглянуто новітні інформаційні технології (ІТ), сучасні форми та методи навчання у вищій школі, котрі створюють передумови для активізації впровадження комп'ютерних технологій у навчально-виховний процес закладів вищої освіти, що дозволяє в комплексі розв'язати низку актуальних проблем, що постають перед нею в сучасних умовах: підвищити інформаційну культуру майбутнього фахівця, зробити доступним для нього світові

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інформаційні ресурси та посилити інформаційну насиченість всього освітнього процесу у закладах вищої освіти країни. Основними засобами реалізації інформаційно-комунікаційних технологій у навчанні є так звані креативні технології – комп'ютерна графіка, гіпертекст, електронні підручники, ГІС - технології, віртуальна реальність, комп'ютерні мережі. Розвиток ІТ та динаміка економічного середовища істотно вимагають змін стосовно підготовки сучасного економіста з огляду на необхідність формування в нього вміння оперувати ІТ, не лише для розв'язання фахових завдань, але й для успішної організації пізнавальної діяльності. Застосування інформаційно-комунікаційних технологій у процесі підготовки майбутніх спеціалістів має низку переваг – можливість контролювати темп навчальної діяльності, обирати рівень складності завдань, здатність наочно демонструвати певні явища та інші. Поряд з позитивними сторонами комп'ютеризації підготовки молодих спеціалістів, існують і негативні, основними серед яких є неврахування вимог і мотивів особистісної діяльності студентів неможливість виконання виховної функції контролю, складність визначення глибини знань здобувачів вищої освіти. Тому рекомендується відшукати оптимальне співвідношення у застосуванні комп'ютерних та традиційних технологій у вищій освіті. Запропоновано модель підготовки майбутнього спеціаліста до професійної діяльності з використанням комп'ютерних технологій, яка включає в себе цілі, принципи, зміст, напрями та засоби, форму та загальну мету. Саме такі зміни в організації навчального процесу дозволять формувати у майбутніх фахівців необхідні для сучасної людини компоненти інформаційної культури.

***Ключові слова**: комп'ютерні технології; модель; мультимедійні технології; інформаційні технології; майбутні спеціалісти; студенти; вища школа; гіпертекст.*

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Formulation of the problem. Transformation of the education system in accordance with the Bologna system, taking into account globalization trends, achieving compliance with the requirements of the information society and finding new forms and methods of higher education creates the preconditions for intensifying the introduction of computer technology in higher education. Computer technology as a powerful tool for learning requires a thorough approach to the formation of teaching methods using these technologies.

Analysis of recent research and publications. The issue of introduction of computer technologies in the educational process, including in higher education is covered in the works of such scientists as M. Yu. Academy, V. P. Bespalko, D. V. Chernylevsky, R. S. Gurevich, M. Z. Gruzman, V. I. Zinchenko, O. G. Usach. etc. Some aspects of the process of computerization of higher education are covered in the State National Program «Education».

Formulation of research goals. The purpose of this study is to analyze the practical significance of computer technology in the educational process and build a model of the use of computer technology in the training of specialists in economic specialties.

Outline of the main research material. The rapid development of technical and software capabilities of personal computers, as well as the spread of a new type of information technology, known as creative technology, create real opportunities for their use in the board system to develop creative abilities in the learning process. There are such types of creative technologies as computer graphics, hypertext, geographic information systems (GIS - technologies), multimedia - technologies, virtual reality [2].

Pedagogical practice in different types of educational institutions shows that the use of information capabilities of these modern technologies, as well as their various combinations in the educational process creates a truly technological breakthrough in methodology, organization and practical implementation of the educational process in various disciplines at all levels. education. Thus, the use of computer graphics opens new opportunities for the development of such an important human quality as spatial thinking [3]. The use of geographic information systems (GIS - technologies) - technologies for obtaining, processing, storing and disseminating information, which operate on the basis of the relationship of semantic data about objects with their spatial characteristics - is also justified and effective. GIS is a shining example of modern integrated information technology, the use of which increases the effectiveness of many applications and tasks. These include, for example, the task of estimating the value of land and buildings, which is purely economic in nature. Modern electronic text, for example, is based on a new technology - hypertext. The basis of hypertext is an extended model of the encyclopedia [9]. Thus, it allows you to quickly navigate a large array of information, as well as meets the requirements of complexity in the study of a discipline, as it contributes to the consideration of the phenomenon in its diversity. Multimedia is defined as a combination of special hardware and software that allows a qualitatively new level to perceive, process and provide a variety of information: text, graphics, audio, animation, television, etc. [4].

Virtual reality systems, which are the pinnacle of multimedia technology, are computer systems that use not only visual and auditory analyzers, but also sensory organs such as touch, smell, vestibular apparatus and so on. This feature is very well used in education, and especially in vocational education, when a computer system simulates a situation that may arise in the professional activities of the student.

In our opinion, various information systems should play a special role in economic education - information retrieval, expert systems, decision support systems, management information systems, integrated automated management systems and branch automated management systems used directly in the process of economic management. systems.

The use of computer-based learning technology is the development and use of educational software. The peculiarity of computer-based learning technologies is that they must accumulate in themselves, along with the computer program, the didactic and methodological experience of the subject teacher. The main problem that is seen here is the development of methods for computerization of the discipline. It is possible to either completely restructure and focus on creating new computerized courses, or to implement a methodology with partial computer support of the discipline, which, in our opinion, is more acceptable. A modern e-book, like a regular print book, consists of pages. But unlike an ordinary book, its pages are not linear, but a grid structure. Each node of this grid-page contains information presented not only in text, but also in graphics, diagrams, animations, sound and live video images. According to the separated keywords and screen areas, the reader has the opportunity to go to another page of the book and thus receive explanations or animated fragments. E-books can be more than just electronic encyclopedias. With the help of personal computers, you can create textbooks of a fundamentally new type, the so-called information-subject complexes. One of them was developed by A. N. Gorshkov, A. F. Starkov, R. A. Tomakova [1].

Modern society makes more and more demands on the quality of training. An important condition for training a highly qualified economist is to create a model of his training.

The model is understood as an artificially created phenomenon for study (subject, process, situation, etc.), similar to another phenomenon, the study of which is difficult or impossible. Today, the model of training a specialist that meets the requirements of the labor market and social needs are at the beginning of its formation. This is due, in our opinion, to a number of reasons. First, in pedagogical science there is no single approach to the interpretation of the term «training model»; secondly, researchers attach different meanings to the concept of «specialist model».

Some scholars point out that the concept of specialist training model contains not only a set of certain qualities, but also a dynamic, adequate connection of the model with the activities of the specialist, and without such a connection the model becomes a statistical complex that will distort society's requirements for the specialist.

The model of preparation of the specialist for professional activity with use of computer technologies, presented in fig. 1, has the specificity as it is connected with transition from traditional didactic system of training – «teacher-student», «student-student», to new system. «Teacher-computer-student», «computer-student» and «student-computer-student».

Thus, the purpose of forming such a model is to reflect the role of computer technology in the training of future professionals.

The implementation of this model should take into account the following principles:

1. The principle of novelty of tasks, which is to use a computer to solve those learning tasks that due to objective reasons (large amount of information, significant time) are not currently solved or are not solved in full. ;

2. The principle of a systems approach, based on which the implementation of computer technology should be based on a systematic analysis of the learning process;

3. The principle of management of educational and cognitive activities, the essence of which is that the effectiveness of computer technology will be achieved if the software and its implementation in the educational process will be carried out under the direct control of the head;

4. The principle of continuous development, which is reflected in what is created

the information base for increasing the cognitive activity of students undergoes a certain reorganization with the development of pedagogy, individual methods, requirements of educational policy, which are constantly changing;

5. The principle of a single educational information base, according to which the computer

media accumulates and constantly updates the information needed to solve all educational tasks to enhance cognitive activity.

Among the main goals achieved in the application of information and communication technologies in the training of specialists are the following:

1. Improving the quality of education through better use of available information.

2. Improving the efficiency of the educational process on the basis of its individualization and intensification.

3. Implementation of promising forms, teaching methods with a focus on developmental and advanced education.

4. Achieving a productive level of training during the study of disciplines.

5. Integration of all types of educational activities in the study of disciplines within a single methodology based on the use of new information technologies.

6. Preparing students for future professional activities in the information society.

7. Improving the quality of education through better use of available information.

8. Improving the efficiency of the educational process on the basis of its individualization and intensification.

9. Implementation of promising forms, teaching methods with a focus on developmental and advanced education.

10. Improving the quality of education through better use of available information.

11.Improving the efficiency of the educational process on the basis of its individualization and intensification.

12. Implementation of promising forms, teaching methods with a focus on developmental and advanced education.

13. Improving the quality of education through better use of available information.

14. Improving the efficiency of the educational process on the basis of its individualization and intensification.

15. Implementation of promising forms, teaching methods with a focus on developmental and advanced education.

16. Achieving a productive level of training during the study of disciplines.

17. Integration of all types of educational activities in the study of disciplines within a single methodology based on the use of new information technologies.

18.Preparing students for future professional activities in the information society.

The core of the model of preparation of a specialist for professional activity are three basic components: mastering new material, applying the acquired knowledge in practice and monitoring success.

The implementation of these three main stages of mastering the discipline is realized through a variety of ways and means, the main role among which, in our opinion, belongs to the pedagogical software.

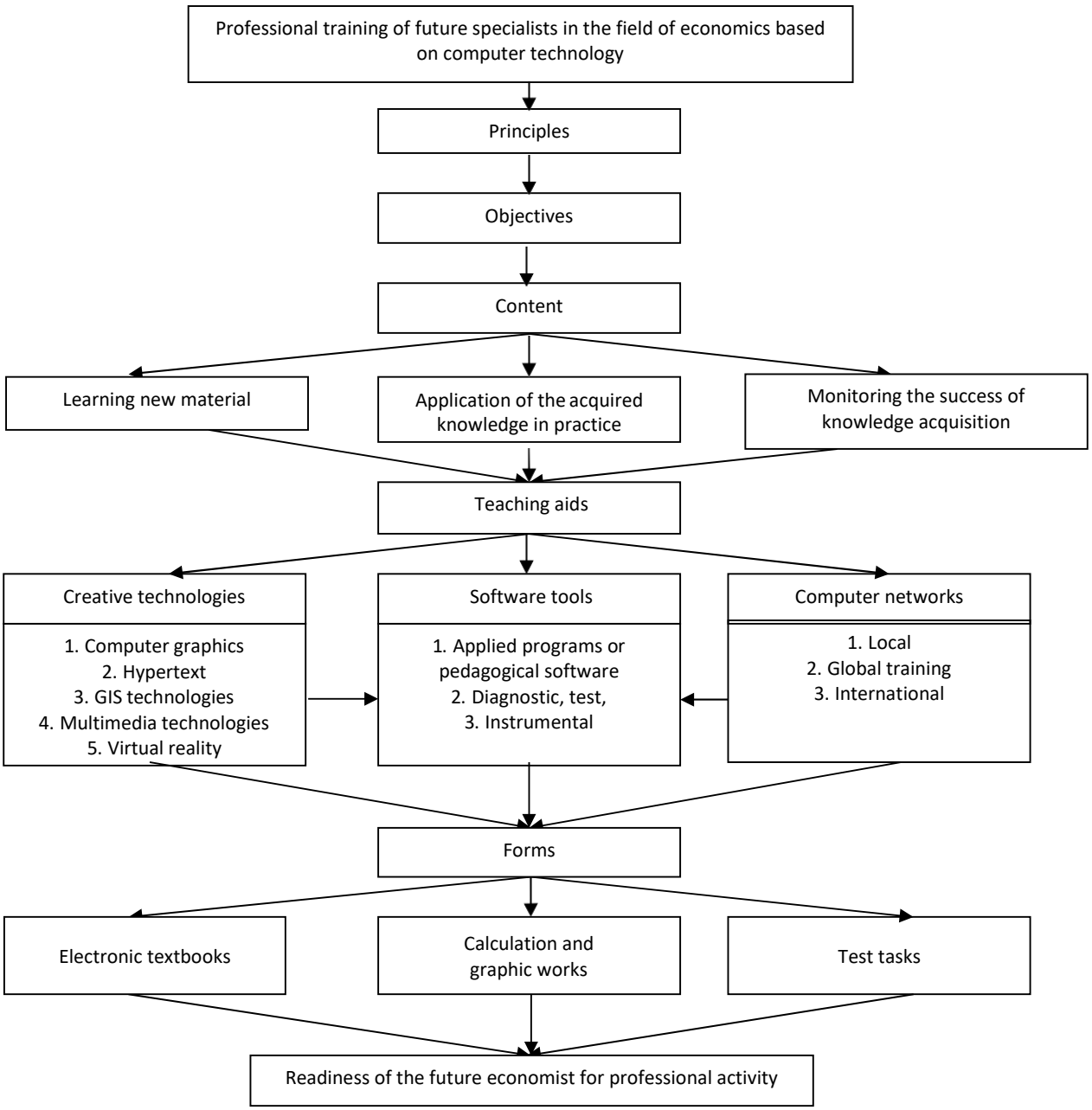

Figure 1 – **Model of preparation of the future specialist in the field of economics for professional activity with the use of computer technologies**

Source: formed by the authors

The importance of such software in the educational process is that they are designed to study a particular discipline; as a rule, constitute a complex system of mastering the discipline; combine elements of creative technology and work in international computer networks. Forms of application of computer technology in the process of training are manifested in:

- using electronic textbooks that may contain both purely theoretical

material, as well as practical and test tasks;

- performing calculation and graphic work, which is especially relevant for

economic disciplines related to calculations and work with large amounts of numerical information;

- performing test tasks that form the basis of control over

using computer technology.

These forms of involving students in information and communication technologies are the most common, in fact, their range is much wider and with the rapid development of computer technology, it is expanding.

The ultimate goal of applying the outlined model, as already mentioned, is the readiness of the specialist for professional activity.

Conclusions. The main means of implementing information and communication technologies in education are the so-called creative technologies - computer graphics, hypertext, electronic textbooks, GIS - technology, virtual reality, computer networks. The use of information and communication technologies in the process of training future professionals has a number of advantages - the ability to control the pace of educational activities, choose the level of complexity of tasks, the ability to clearly demonstrate certain phenomena and others. Along with the positive aspects of computerization of training of young professionals, there are negative ones, the main of which are disregard for the requirements and motives of personal activities of students, the inability to perform the educational function of control, the difficulty of determining the depth of students' knowledge. Therefore, it is recommended to find the optimal ratio in the use of computer and traditional technologies in higher education. The model of preparation of the future specialist for professional activity with the use of computer technologies includes the purposes, principles, the maintenance, ways and means, the form and the general purpose.

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