Electronic Textbook - A Means Of Improving The Effectiveness Of The Educational Process

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Abstract

This article discusses in detail the role of electronic textbooks in improving the educational process. It also sets out the principles and requirements for creating an electronic textbook.

Key words: electronic textbook, training, study guide, presentation, hyperlink, computer, operating system, programming language, graphics, multimedia elements;

One of the most important areas reflecting the achievements of scientific and technological progress in the first place is the field of education. It is education that is the factor that ensures the future of individual countries and of all mankind, is the driving force accelerating the development of society.

In recent years, in our republic great importance has been attached to the educational process as an actual system.

It is known that textbooks and teaching aids, as well as other teaching materials are important in improving the quality of education. The existing traditional textbooks that are based on print media are insufficient to achieve the goals of informatization in connection with the introduction of information technology in education. In view of this, the creation of electronic

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resources and their introduction into the educational process has become an urgent problem of the informatization of education. In this regard, the creation of electronic educational literature and their application in the educational process is of great importance.

Requirements for enhancing the independence of students, the content of educational material, as well as those providing for further individualization of tasks of a supervisory nature, the tendency for students to switch to an information-communicative form of independent education is determined by changes in the development of society, the activation of the process of informatization. The use of information technology in self-education, along with printed literature, gives students the opportunity to work with training programs, test systems, databases and other electronic resources. Despite the fact that all electronic publications can be supportive in the organization of independent student learning, the most effective of them are multimedia.

The effectiveness of the use of information technology in self-study of students largely depends on the successful solution of tasks of a methodological nature related to the content of the material and the way in which automated learning systems are used. Therefore, in self-education, it is advisable to use automated educational systems in the form of program-methodological complexes created according to the content of a particular curriculum. Such systems can include various books, special programs designed to replicate materials or systematize knowledge, programs for access to remote information resources, knowledge control, automated systems for assessing competencies and skills, and much more.

An electronic textbook is a source that can collect, describe, update, store, based on modern information technologies, present and control knowledge in the form of communication. E-learning literature is classified into different

categories, including all electronic learning editions, from electronic lecture texts to electronic textbooks. Among them, the electronic textbook occupies a special place as a teaching tool, which creates wide opportunities for the use of training materials in the educational process. Experience shows that a person can memorize information obtained with the help of the organs of vision 5 times stronger than through the organs of hearing. Unlike the auditory organs, information received from the organs of vision is not re-encoded, but gets directly into the memory and stored for a long time.

An electronic textbook provides more opportunities for demonstrating educational materials than traditional textbooks. The electronic textbook must meet all the requirements for the educational process, along with the implementation of didactic functions designed to enable students to work independently. This means that when introducing electronic textbooks into the educational process, in addition to their pedagogical aspects, taking into account their psychological and hygienic aspects will ensure the intellectual abilities of students and students, and their active participation in this process. The organization of the educational process on the basis of electronic textbooks provides a number of advantages, such as quick updating of educational materials based on the latest scientific achievements, and the advantage of electronic textbooks over traditional textbooks lies in addition to its "intellectual" power, and it is clearly noticeable in the possibility of timely provision of information in the right place.

An electronic textbook should contain all relevant educational materials on a specific subject, and its intellectual level, in turn, has several advantages over a regular textbook. For example, a quick search for information, progress on topics to improve with the help of multimedia and graphic elements, etc.

Each electronic textbook should be in a separate form and meet certain standard requirements. An electronic textbook is educational literature based on the use of a computer-based teaching method and the comprehensive and effective development of educational material on a subject that belongs to one of four levels.

Level 1: an electronic textbook that provides educational material only in verbal (text) form;

Level 2: an electronic textbook, which presents educational materials in verbal (text) and graphic (graphic) form;

Level 3: a multimedia tutorial, i.e. a multimedia electronic textbook in which information is presented in three-dimensional graphic form, audio, video, animation and partially in oral form (text);

Level 4: An electronic textbook that describes the material not only in sound and three-dimensional spatial form, but also with the help of tactical information (feel, feel), which creates the student a representation of the entrance to the real world with the image of a stereo copy "on the screen" and move relative to objects in him.

All categories of electronic textbooks create great opportunities for increasing the efficiency of the educational process and organizing independent learning and distance learning for students.

The main purpose of using electronic textbooks is the formation of a new informational, teaching methodology, increasing the efficiency, quality and productivity of the learning process through the use of modern informational and pedagogical, informational and computer technologies, the widespread use of modern educational sources, electronic textbooks in the continuing education system, and organizing them libraries, the introduction of distance learning methods in education and access to the global electronic system

Birmingham training. To achieve the above pedagogical goals, an electronic textbook must meet certain didactic, pedagogical and psychological requirements.

The didactic requirements include scientific knowledge, easy achievement, problem determination and comprehensive knowledge, the active and informed participation of students in the educational process, the systematic and gradual introduction of knowledge, the provision of knowledge, the acquisition of knowledge, the integrity of the developing responsibilities of professional staff and educators in the education system, systematic approaches in providing students with self-study, interactivity, ensuring harmonious learning, presentation I have educational material.

Psychological requirements include requirements that reflect the aesthetic, hygienic and medical-psychological aspects of the electronic textbook. This is due to the fact that the human body requires peculiar properties of perception of information in electronic form. Not only its content, but also factors such as size, appearance of letters, color and image movement play an important role in the perception of information. Therefore, the text of the electronic textbook should have its own characteristics. Functions of the electronic textbook, such as blinking, highlighting, underlining and sound, strongly affect students to quickly perceive information. To solve these problems, it is necessary to improve the quality of the information provided and create a number of opportunities in the electronic textbook that can be used to change many parameters. For example, mute, decrease, increase sound, change color, etc.

Achieving the effectiveness of an electronic textbook is based on taking into account the psychological aspects of interacting with a computer, which include the verbal-logical, sensory way of presenting educational material, the

process of cognition (cognitive); must correspond to the level of perspective (feelings, perceptions) and the level of expression. Also, the psychological processes associated with cognition include the reception of information (mainly vision and hearing, feeling), attention (its stability, concentration, transition from one to another, distribution and level of attention), thinking (theoretical concept, applied-indicative and practical-movement), imagination, memory (instantaneous, short-term and long-term, short-term, the phenomenon of placing information in short-term memory), etc.; The electronic textbook includes basic requirements, such as user friendliness, a creative approach to the study of science and the creation of acceptable working conditions for health.

A special place in the electronic textbook should be given to the knowledge control mechanism. The knowledge control mechanism provides control over all topics of the electronic textbook. To do this, all questions on all topics in the electronic textbook database should be presented to students in a convenient form. The presence of the text search function in the electronic textbook further expands the capabilities of the electronic textbook. One of the additional requirements for this function is the ability to enter a sufficiently long text in its line.

The presence of a glossary of terms in an electronic textbook also increases the level of its effective use. Therefore, it is convenient to give a separate list of terms and their descriptions, and link them with hyperlinks. There should be buttons for returning to the main text from the glossary. The electronic textbook control system has a number of buttons that help you work with the text and display it on the screen; they allow you to switch from the table of contents to the topic, page to page, forward, backward, return to

the table of contents, help, consists of hyperlink buttons to display pictures on the screen , animations and different tables, graphs.

Ensuring the interactivity of training should be carried out in a certain order, taking into account the specific aspects of teaching subjects. The electronic textbook should provide the student with various options for performing and monitoring repetitive training activities.

In activities for the implementation of electronic communication using an electronic textbook, it mainly includes the formation and control of the learning process in the form of practical exercises, verification of the correctness of the selected answers, mathematical calculations, verification of the correctness of answers, control over the input of graphic data, control over the input of analytical expressions in unlimited form and etc.

Regardless of the level to which the electronic textbook used in the educational process belongs, its creation should be based on specific principles. The basic principles of creating an electronic textbook are:

development of holistic scientific and methodological foundations and technical requirements for the creation of electronic textbooks;

identification of priority subjects for which the creation of an electronic textbook is necessary;

equipping educational institutions with modern computer equipment, their connection to the Internet;

the creation of teams to create electronic textbooks in educational institutions;

to develop a copyright protection mechanism for creators of electronic textbooks;

the creation of material incentive mechanisms for authors of electronic textbooks, professors, teachers, and specialist staff who introduce electronic textbooks into the educational process;

creation of the legal framework for standardization and certification of electronic textbooks;

organization of competitions for the creation and application of the best electronic textbooks, organization of scientific and practical seminars, conferences and other events on pressing issues;

the creation of a library library of electronic textbooks in higher education institutions and between universities;

use the experience of developed countries in the creation of electronic textbooks.

Among electronic textbooks, the use of electronic textbooks, especially those created as a result of the use of multimedia practical programs and technologies, is currently yielding excellent results. Therefore, let's dwell on multimedia applications and technologies. When preparing and using multimedia electronic textbooks and educational materials, you will need a personal computer, microphone, speaker system (hardware), WINDOWS, UNIX, LINUX (any of the system systems), FLASH MX, DREAMWEAVER, VISUAL STUDIO, VEGAS, INTERNET EXPLORER (software) HTML, XML, PHP (programming languages) and much more.

FLASH MX technology is a multimedia technology, FLASH MX technologies are an integral part of graphics, animation, interactivity, sound (tone), creation, use, presentation of flash-images, creating Web pages and other features. With its help, you can create multimedia (multi-environment) electronic textbooks and educational materials.

HTML, XML, PHP and other programming languages can be used to create multimedia training materials. For example, the HTML programming language is used to create an electronic textbook program or educational material that users can read, view, and read. Tags and priorities are used in creating programs. An electronic textbook may consist of several training materials. Each of the training materials is stored in a separate document * .html. All training materials are combined into an index.html file with one view.

Using animation in teaching materials helps users quickly understand the material. If the number of animations is large, it is recommended to create a folder and save them in it. since the sound (tone) is not saved together with the training materials in the form of a file, because after creating the animation, the sound (tone) is added to the animation using software tools.

Each training material created can be stored by users on external storage devices and used at a convenient time for them.

In conclusion, it should be noted that electronic textbooks provide a wide range of opportunities for staff of teachers and student students. The organization of the educational process on the basis of electronic textbooks has several advantages, such as the rapid updating of educational materials based on the latest achievements of science and the like. As a result of the use of electronic teaching aids in education, the educational process is individualized. Each student will have the opportunity to master the material according to the plan, based on their individual abilities. This may result in, well-performing students, far ahead of students with low academic performance.

An electronic textbook can also be used to control the level of knowledge acquisition. It will also need to include a monitoring system in its

composition. For each section, tests can be given. Test results are determined using a computer. The results of the test can be used by the teacher for the current or interim assessment. Correctly written tests give an idea of how well the student has mastered the topics covered. It will be possible to repeat topics that have not yet been mastered. Thus, both the teacher and the student can control the learning process.

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