REQUIREMENTS FOR CREATING MULTIMEDIA ELECTRONIC TEXTBOOKS FOR STUDENTS OF THE 9TH CLASS OF GENERAL EDUCATION SCHOOLS

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Abstract

The article recommends the use of multimedia electronic textbooks in the teaching of informatics in secondary schools. Suggestions for creating a multimedia electronic textbook on IT science are presented.

Key words: electronic textbook, multimedia, informatics, teaching methods

The development of science and technology, development shows the achievement of high results and the demonstration of the power of the state. The development of technical technologies requires the introduction of the latest modern computer technologies directly into the educational process. One of the major problems of today is training of competitive personnel who can meet world standards. The main link of continuous education is the application of the most modern methods, methods, and educational technologies in general education schools.

Many scientific researches have been carried out on the teaching of informatics taught in general schools. However, the use of e-learning, the organization of lessons and the didactic requirements of e-textbooks have not been sufficiently researched.

Application of computer technologies in education S.V. Panyukova, M.A. Fayziev, O.J. Bobomurodov, N.I. Tailakov, Q.T. Olimov, A.G. Khaitov, A.Kh. Gaffarov and others in their scientific research emphasized that the effectiveness of teaching will be high..

Yu.M. Kolyagin, A.A.Abdukodirov, U.Yu.Yuldashev, F.M.Zakirova, I.Mirmakhmudov and others conducted scientific research on teaching computer science.

N.I. Tailakov, Q.T. Olimov, A.Kh. Ghafarov, V.S. Toiskin, V.V. Krasilnikov, V.V. Gura et al. have provided scientific advice on creating a new generation of modern educational literature and electronic textbooks.

By teaching "Informatics" science, it helps students to develop computer literacy, information reading, and extracting the necessary competencies. Pupils with the necessary competencies are the basis for the development of worldview, thinking, creative work skills.

In the process of teaching computer science, it will be understandable and interesting for the student to have data in the form of graphics, diagrams, images, and numbers. In addition, it is necessary to use modern computer technologies to make the data more accurate and fluent.

Along with the use of electronic textbooks, various software products can be used in the teaching of computer science. For example, PowerPoint, Apple Keynote, LibreOffice Impress, Google Slides, Prezi, etc. can be used for presentation.

An electronic textbook is a learning software system complex, a didactic cycle of the entire educational process: theoretical information, participation in educational activities and control of the level of knowledge, and it differs from other textbooks by the presence of an information search system.

The use of color computer animation, high-quality graphics, video fragments, schemes, formulas, the fact that the topics of the studied subject are embodied in the form of a sequential

presentation or connected in the form of a branching dynamic chain, opportunities for managing the processes of extracting and presenting the necessary information are created.

The main difference between an electronic textbook and a printed textbook is that it has the ability to use text, speech, hypertext, sound, video, games, tests, exercises (trainer), 2D and 3D graphics, color images, etc. It does not require any funds to update and complete the electronic textbook.

Structure of sections of electronic publication:

single-volume e-edition-e-edition designed as a computer-readable medium;

multivolume electronic publication - electronic publication, consisting of two or more parts, on any independent computer-readable media, representing a whole with itself in content and form;

e-serial-serial e-publishing, covering all roofs, combining general plans, thematic, selected purpose, one type formalized release [2,5].

Olimov Q.T [9] emphasized the creation of electronic literature in the process of continuous education.

The electronic textbook is a modern means of education, which implements communication in the order of learner-textbook-pedagogue. The more active introduction of electronic textbooks in special subjects is noticeable within the framework of practical training. This can be explained by the following factors:

❖ reduces the amount of manual work of teachers in the formation and verification of individual experience and practical training;

❖ the possibility of conducting practical training will be significantly expanded through the convergence of collective access centers to remote experimental stands;

❖ It will be possible for vocational colleges to come closer to higher education institutions and leading production enterprises [9].

Bobomurodov O.J. [8] stated in his research. It is emphasized that the computer should free the teacher from confusion and monotony, and that computer technologies should first of all ensure the creative approach of students and be a step that increases the productivity of the educational process. The following arguments prove the correctness of this position:

❖ mastering all methods of using the computer as a tool for learning and independent activity;

❖ use of computer as a learning object.

❖ Currently, thousands of training systems have been created, and there is no general classification of them. These systems can be divided into the following types:

❖ exerciser (trainer);;

❖ strengthening knowledge, skills and abilities;

❖ cognitive training is designed to master working concepts in a mode close to programming;

❖ imitative and modeling;

❖ playful;

❖ implementer of acquired knowledge control;

❖ information and information provider [3].

Targeted electronic tools are divided into the following groups depending on the educational goals:

• for schools;

• for undergraduates;

• for highways;

- For adults [2].

E-textbooks allow the learner to organize his lessons according to the speed and sequence he wants. From this, it can be determined that the learner can change the type of lesson at any time, control theoretical information, game technology, knowledge testing, etc.

The scientific requirements of e-textbook teaching must first of all have sufficient in-depth educational materials with the latest scientific innovations. Realization of scientific principles of teaching:

- the leader finds the principle of selection of the content of the studied subject, which makes sense of the educational subject;
- it is necessary to ensure a dialectical approach to the basis of each newly studied subject and phenomenon, to consider the impact on other subjects and phenomena.
- to ensure the requirements of expressing scientific terms and concepts in this discipline;
- the relevance of the described scientific concept to the context, comparing the scientific theory or hypothesis and the studied concept to the opposite concept;
- to reveal the history of the studied phenomenon;
- to give an idea of the openly studied phenomenon using the scientific method of search.

The scientific requirements of the modern information technology tool of electronic textbook teaching provide an opportunity for the realization of new and high-quality imitation scientific research and scientific innovations. Using scientific research to simulate mathematical elements and modeling, the teaching subject is comprehensively in-depth, and the application of processes provides information-absorbing multimedia and virtual reality programs.

Convenient opportunities for teaching using a multimedia electronic textbook means determining students' age and individual characteristics, as well as the level of theoretical complexity and deep mastery of the educational material. The fact that the learning material acquired by the students is too complex and heavy leads to poor formation of knowledge. It is necessary to consider the accessibility of the necessary interdependence of its scientific principle. Learning should never be too easy, never too difficult [2].

Experts say that the level of mastering the material is 10% when reading, 20% when listening, 50% when seeing and hearing, and 70% when discussing with others. Therefore, multimedia combines several methods of information transmission - text, static image (image and photo), dynamic image (multiplication and video) and sound (digital and MIDI) - as an interactive product[4].

In the teaching of informatics in general secondary schools, it provides many different types of information to the needs of students, and in real life (under natural conditions), it shows the natural processes that continue for months, years, and hundreds of years.

The use of modern computer technologies in the educational process creates a wide range of opportunities for teachers. It will be an important factor in improving the quality of education and accelerating it. As a result of training based on new technologies, the quality of trained personnel improves and contributes to development.

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