ADVANTAGES AND DISADVANTAGES OF TECHNOLOGIES FOR CREATING ELECTRONIC TUTORIALS IN TEACHING THE TOPIC OF VIRTUAL REALITY IN HIGHER EDUCATIONAL INSTITUTIONS

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Abstract

As a result of the rapid development of the field of information and communication technologies and their impact on all aspects of society, the role of electronic means of education in the field of Education has increased [2]. E-learning is an electronic resource that contains systematic information in the scientific and applied movement and is suitable for the educational process and the teaching process, and is intended for students of different ages and learning. [1]. The most popular means of e-learning are e-books.

Key words. Electronic teaching, educational process, higher educational institutions, programming languages, multimedia tools, multimedia technologies, hypertext technologies.

Currently, modern teaching aids should be aimed at improving students, students ' knowledge of their independent work, and therefore it is necessary to strengthen the motivation for applying the topic, be it easy to use, informative, visual, accessible to everyone who wants to fully master the topics, provide knowledge of the widespread use of modern telecommunications and information technologies when conducting trainings for highly qualified specialists. Most of these requirements can be contradictory and complex, therefore, the development of electronic textbooks is a complex task that is solved by a team of specialists in various fields, requiring the correct selection of appropriate software.

When using a complex of programs used in the creation of electronic textbooks, they are divided into groups, including the purpose and function of the program, the technical requirements of the computer and the features of the application. According to the established criteria, it can be classified as follows :

- programming languages;
- multimedia;
- hypertext and hypermedia tools;
- special software for creating electronic textbooks.

Programming languages. Examples of these are Visual Basic, Borland C++, C #, Delphi, Java, etc. These programming environments allow you to create very versatile programs, including electronic textbooks. But the disadvantages of electronic textbooks created using programming languages include:

- complexity of programming, modification and maintenance;
- large costs due to the complexity of development.

Advantages:

- supports different application styles. (color palette, interface, methods for presenting materials);
- lack of technical limitations.

It should be noted that it is not appropriate to use programming languages for the creation of electronic textbooks, given the state of technical support available in educational institutions. This program, as a rule, is used to write separate modules of textbooks equipped with interactive elements (knowledge test modules, assignments, virtual experiments, etc.).

Multimedia tools. Multimedia technologies combine several ways of presenting information: text, images, animations and interactive sounds. Multimedia tools can significantly enrich educational materials by activating all methods of sensitivity. Thus, the advantages of electronic textbooks created using this program are as follows:

- the possibility of joint presentation of educational materials in the form of graphics, text, sound;
- ability to automatically view the entire product content ("slide show").

Disadvantages:

- large volume of the electronic textbook on disk;
- the sequential structure of the presentation of educational materials prevails.

Hypertext and hypermedia tools. Hypertext is a method of presenting the text part of a textbook in a nonlinear way, which includes words that are linked to certain parts of the text [3]. Thus, the user can deviate from the sequential state through certain references, without having to study only the pages of the text, that is, manage the process of providing information. In the hypermedia system, images can be used in parts, and information can be text, graphics, video clips, sound.

Hypertext technologies meet the requirements of convenient use of the textbook. If necessary, such a textbook can be printed on the internet and can be

easily corrected. Today there are various formats Hypertext (others HTML, DHTML, PHP).

Advantages of electronic textbooks created using hypertext technologies:

- full compatibility with web technologies and the possibility of publishing on the Internet;
- compact presentation and low volume of educational material using special data compression algorithms.

Disadvantages:

- lack of a single standard for the provision of educational material;
- connection in the form of training materials from a specific browser.

Special (practical) software for creating electronic textbooks. Nowadays, there are a huge number of special programs for the preparation of electronic textbooks. The table presents the advantages and disadvantages of electronic textbooks created using them.

The advantages and disadvantages of electronic textbooks created using special software are considered to be:

Advantages	Disadvantages:
A single standard for providing components for various educational courses	Limitations in isolation and multimedia presentation
Availability of built-in monitoring and training systems	Restriction of the student's freedom in the structure of educational materials and their components
Complex structure of components and materials	

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