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Multimedia Technologies in Education and Teaching Students of Pedagogical Directions

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Abstract: Due to the fact that in various fields of education a multimedia computer turns into a universal tool of activity, the basic terms and didactic properties of educational multimedia resources and technologies are revealed; the general methodological problems of teaching and the approaches of the authors of the article to the content and methods of teaching students the development of educational multimedia products within the framework of a special course of study are outlined. At the same time, the importance is emphasized not of a technocratic approach to learning, but of an approach based on the pedagogical design of a multimedia product through a systematic approach; the main stages of mastering multimedia technologies for the field of education by students are proposed

Keywords: Multimedia Technologies, Form Of Information Presentation, Multimedia Forms Of Knowledge Transfer, Multimedia Educational Products, Design Of Educational Multimedia Products, System Approach, Technocratic Approach.

INTRODUCTION

In modern reality, a multimedia computer has become a universal tool of activity. This is observed in all areas of education and science, production, management, business and culture. In the information environment, the following concepts are often used: multimedia technologies, multimedia resources, multimedia products, educational multimedia, multimedia teaching aids, multimedia visualization of information, etc.

Let us first analyze one of the main concepts of this article - the concept of "multimedia", its nature and distinctive features, and also consider what is its role and value for educational purposes.

The terms "multimedia", "multimedia" Latinisms. These terms came to us from English sources in the original transcription; the word "multimedia" comes from the combination of two English words - "multy" (consisting of many parts, collapsible) and "media" (means, environment). Therefore, literally, the term "multimedia" means "poly-environment", "multi-environment". We define the term "multimedia" as follows: it is a computer technology that allows the presentation of content through a combination of different types of information - both traditional static information (text, graphics) and dynamic information (animation, speech, music, video). Therefore, multimedia (as a way of presenting information) is a single digital space, in a syncretic form showing different ways and types of information presentation.

Also, the term "multimedia" refers to the final product made on the basis of multimedia technologies, and multimedia tool shells and programs, and modern computer equipment (i.e., the presence of a DVD-ROM drive, sound and high-performance video card in the computer; the presence of a high-performance processor, a sufficiently large amount of memory, high resolution monitor, etc.). Let's reveal the qualitative features of multimedia resources, including educational resources, in contrast to non-multimedia resources:

- Information in them is presented in digital form and can be contained in various forms (in the form of text, sound, graphics, animation, video) and in various combinations of these types in one resource;
- Information in them is organized on the basis of hypertext and hypermedia technologies; information in them is presented interactively, which provides the possibility of active interaction of the resource, program, service (on the one hand) and the human user (on the other hand), their mutual influence. This is an essential feature of multimedia resources.

Multimedia is also actively used in other information institutions, in business and advertising, in the entertainment and leisure industries, that is, where it is necessary to effectively transfer large amounts of information per unit of time. It can be concluded that in the conditions of the emerging information society, both the educational and cultural and social role of multimedia technologies is increasing, the age of

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multimedia digital culture is coming, in which people gain knowledge, learn in a new form - with the help of multimedia resources.

Let us reveal through the quote below the fundamental role of multimedia technologies, a multimedia way of representing knowledge in the emerging information society: "... the fundamental difference between the information society and the industrial one is that the main thing in it is not the desire to get enough of the production of a commodity mass from all available raw materials, but wealth knowledge drawn from information multimedia resources in order to maximize the use of highly developed technology to meet the material and spiritual needs of society" (Shlykova, 2009).

Due to the simultaneous impact on the user of graphic, sound and visual information, multimedia tools have a great emotional, spectacular charge, therefore they are actively used in educational practice, in the learning process.

At the same time, due to the possibility of multimedia technology to visually, spectacularly present information, this makes it possible to implement the fundamental didactic principle of visibility in teaching more effectively, at a qualitatively new level, through the method of multimedia visualization of educational material.

This method can be considered as a new visual method of teaching. It is based on the following. The main source of knowledge and the main means of cognition are multimedia visual images of the studied phenomena (objects, processes), presented to the student through the screen in an interactive intellectual

- Mode. The assimilation of educational material occurs through emotional and sensory
- the perception of these multimedia images, combined with interactive actions
- Holes above them. Our research is aimed at developing a methodological system of education
- future teachers to use information technologies, first of all,

The media. In general, in the above conditions of information of society, the most important direction in the modernization of education is the preparation of the future teacher for life and professional activities in the information society, a competent teacher with a high level of information literacy and culture, able to effectively apply new information, multimedia technologies in the learning process.

In Russian educational practice, when teaching multimedia technologies at a university by students of various areas of training (pedagogical and non-pedagogical areas), for example, in the course "Multimedia", as a rule, the following aspects are studied: general issues of hardware and software for multimedia technologies; technologies for creating multimedia products; development of specific software tools and development through their multimedia products; features of the use of individual multimedia products distributed on CD-/DVD-ROM disks or on the Internet, etc.

Let us single out the features of the organization of teaching students of pedagogical areas the development of multimedia teaching aids. Obviously, future teachers will have to work in the age of multimedia culture. It is important for them to know the possibilities, the didactic potential of multimedia technologies, to be able to implement them, it is important to master the technologies for creating effective multimedia tools learning and multimedia visualization technologies. For the modern teacher mastering these technologies becomes a prerequisite for efficiency his professional activities.

However, a number of authors (I. V. Balandina, N. O. Vetlugina, V. A. Kastornova, S. V. Lozovenko, E. V. Malkina, etc.), who study the phenomenon of using multimedia technologies in education, note its insufficient development from the standpoint of pedagogy, psychology and teaching methods for the development of educational multimedia tools.

Our study of the current system of training future teachers for the development of multimedia forms of knowledge transfer (primarily means of interactive multimedia visualization of educational information) also showed that technocracy still dominates here. First of all, software and hardware aspects of multimedia technologies are considered; techniques for working with computer multimedia software are seen as an end in themselves. Rarely are multimedia products created with predetermined properties to implement a specific teaching methodology and solve planned didactic tasks.

So, within the framework of the program of the special course "Multimedia Teaching Tools" developed by the authors of the article, the main stages in mastering multimedia technologies by students are the study of the following issues, topics (we list them in the order of study during the course):

- multimedia technologies as a phenomenon in culture, in education; the possibilities of multimedia as a hypertext and hypermedia system, as a form of collective consciousness and information retrieval environment, as a means of electronic interactive communication (on the example of the Internet); didactic potential of multimedia technologies, the implementation of the principle of visibility in teaching with their use;
- The essence, strategy of a systematic approach to the design of educational multimedia tools;

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- principles, methods of structuring information for a multimedia product; techniques for converting book text into a concise structured text with the subsequent creation of a multidimensional hypertext basis for multimedia; principles of transformation of the book text into the language of images, into the culture of the multimedia screen;
- General questions of computer design; determination of a single style, color and graphic solution of the product (development of the concept of a graphical interface of a multimedia product).

After the fourth topic, the teacher formulates creative tasks and organizes the implementation of creative projects by students to develop educational multimedia products in the following sequence (the following topics of the course are studied in the same sequence):

- Collection of information, it's structuring for alignment in a hypertext structure;
- Development of a pedagogical scenario for a multimedia product (basics of pedagogical design of a multimedia product) based on a systematic approach;
- searching the Internet or taking photographs, scanning photographs, illustrations and other types of graphics and obtaining graphic resources; importing them from different formats into the required one;
- Subsequent targeted processing of graphics for a multimedia product;
- Principles, technology for creating a system of hypermedia links of individual components of the product into a single whole;
- Filling frames with concise structured text;
- Inclusion of video fragments, sound accompaniment;
- Testing the work of the developed product.

Thus, the student receives the fundamentals of using new technologies in professional activities and comprehends a holistic picture of the multimedia product development process, which guarantees the receipt of a truly useful, professionally significant electronic manual.

Note that the technologies for processing digital graphics, video, sound, technologies for working with various multimedia editor programs are considered primarily in other academic disciplines listed above ("Multimedia", "Computer Graphics", "Pedagogical Software", "Information Technology in education"). At the same time, with a small number of training hours, we believe that when studying these technologies, first of all, we should consider graphics and animation processing technologies as one of the maintools for creating multimedia products, the minimum necessary means of visual non-verbal transmission of information in such products.

This special training course "Multimedia Learning Tools" is dedicated to the pedagogical design and development of multimedia learning tools that interactively visualize educational material and effectively implement the didactic principle of visibility, as well as the use of information technology in education; is intended for students of various forms of education (full-time, part-time and through the developed electronic version of the course - remote). The course was tested by the authors of the article in a number of universities in the city of Nukus.

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