CREATION OF THE MULTIMEDIA ELECTRONIC INFORMATION ON EDUCATIONAL RESOURCES

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Annotation
The paper discusses technologies for creating multimedia electronic information, educational resources for educational institutions.
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Introduction

The modern stage of human development is due to the transition to universal informatization, the introduction of computer technologies in various spheres of human life. In this regard, the primary problem is the application of modern methods and means of information processing in practice. A huge role in solving this problem is played by the use of multimedia technologies, known for their extensive positive qualities in various fields. Multimedia products have found wide application in advertising, demonstration and various information spheres, but the widest application of multimedia technologies has found in the field of education [1-4].

To create a successful multimedia application, you should follow some rules that reflect the difference between electronic resources and the usual paper ones. For example, the presence of a large amount of textual information on the structural unit of a multimedia application (page, slide) greatly burdens the student. It is recommended to "dilute" the text with various graphic, audio and video information. Also, when creating a multimedia resource, you should adhere to the most readable of computer monitors, fonts that do not have serifs (Arial, Lucida Console, Verdana). When designing slides in Power Point, you should not align words in large print to the width of the slide, as this often creates large gaps between them, causing your eyes to stutter when reading. This can cause premature viewer fatigue. In addition, you should pay attention to the color scheme of the application, where it is recommended to use a dark font color on a light background - this will allow the human eye to fatigue less, which is due to the bright light flux emanating from the surface of the monitor.

Main part

A significant increase in the efficiency of integrated perception of information and the use of components of multimedia electronic information educational resources (MEIOR) provides the use of a virtual reality environment. The study of software tools for creating and editing MEIOR components, the process, stages and technologies for creating MEIOR products, as

well as instrumental integrated developer environments opens up new opportunities for MEIOR application. The study of the components of the modern educational environment, traditional and electronic educational resources (EER), the features of the use of MEIOR technologies in training systems, as well as examples of the implementation of the MEIOR training systems opens up new opportunities for their development. But all these issues are united by the fact that they are based on promising components of MEIOR, providing an intense impact on a person through various channels of perception, and their particular effectiveness should be expected in the field of education.

The comprehensive goal is to give an idea of the most striking hardware-software and functional manifestation of MEIOR in a combined virtual reality environment, on the process, software and technologies for creating MEIOR products, as well as their application in training systems.

Successful study of training materials will demonstrate the following level of training, allowing [2,3]:

• Know the purpose, functions, types, classification, principles of construction and modes of operation of various MEIOR components; means of user interaction with MEIOR components; properties and capabilities of well-known and promising technologies of MEIOR; the possibilities and features of the application of MEIOR technologies in education;

• Be able to professionally work with software systems (PS) MEIOR; optimally allocate and use resources for MEIOR funds; effectively organize the development processes of MEIOR EOR and computer training software;

• Have an idea of the possibilities of promising MEIOR environments, such as virtual reality, interactive three-dimensional representations and intellectual actions; on the variety of software tools to support the MEIOR components and the development of MEIOR educational programs and resources;

• Possess key concepts: virtual reality, channels of human perception, interactive intellectual actions, elements, programs and technologies of MEIOR, internet / intranet technologies, author systems, educational environment, ESM, computer learning software, interactivity.

One of the promising directions for increasing the efficiency of using computers is associated with the development of hardware and software for complex impact on the user of a personal computer (PC) simultaneously through several channels of perception. A person's consciousness concentrates together, unites information received through various channels into a single image.

Analyses

At the same time, in addition to well-known and widely used means and techniques of audiovisual impact (sound: speech, music, special effects; image: 2D and 3D graphics, colors, shadows, lighting and highlighting, animation, animation, video films), touch

interfaces are being used - means of receptor action on various parts of the human body surface (in particular, tactile perception is activated).

Against the background of the use of traditional computer tools - such as stereo and multichannel sound, stereo image (special glasses), MM systems, a wide variety of new PC peripherals (trackball, special keyboards, panels and set-top boxes, CD, DVD drives, magneto-optical, etc.) completely unfamiliar means become available.

The user disconnects from the surrounding reality and steadily plunges into the cybernetic space (Cyberspace) synthesized by all this technical complex under the control of a PC, the virtual (apparent) world. He creates some very plausible virtual reality (Virtual Reality, VR) of what is happening. VR has a very high motivation and gives a colossal information impact, sometimes overwhelming the user with information [6].

The term "VR" itself is interesting. The fact is that usually in relation to computers, the term "virtual" is interpreted as imaginary, illusory. But the paradox lies in the fact that in translation from English the term "virtual" means exactly the opposite - actual, real, existing.

Under the MEIOR application, in the general case, we mean a software tool, a significant part of which is MEIOR tools.

The basis for the classification of MEIOR applications is the following classification features.

1. By the type of MEIOR resource:
• audio MEIOR applications,
• video of the MEIOR application (clips and fragments without audio accompaniment),
• audiovisual MEIOR applications,
• combined (integrated) MEIOR applications - contain all possible combinations of MEIOR resources;
2. By location:
• local,
• remote (network);
3. By the way of interaction with the user:
• automatic (films, presentations, videos, animations),
• guided (menu system),
• interactive - with advanced dialogue tools (messages, selection and input fields, etc.).
4. By scope (see next paragraph).

By and large, all the numerous areas of application of MEIOR applications can be summarized in three main groups.

1. Business area where can be used:
• electronic means of supporting professional activities;
• electronic thematic documentation;
• electronic means of information search support, which allow not only to facilitate the tedious procedure of forming a search query, but also to make the search more natural;

• interactive presentations, which allow using dynamic representations (animations) to show the presented product from any point of view, demonstrate the company's goals, etc.
• electronic advertising, where, as can be seen from the example of daily television advertising, the possibilities of MEIOR are truly endless.
2. Training and self-education, where usually
• interactive training (with a teacher in a classroom PC),
• interactive self-study (without a teacher),
• training (consolidation of skills on training programs),
3. Entertainment (leisure), when most often used:
• search for educational information and access to it. The constantly updated information and means of MEIOR of the Internet environment today are the center of active creative development and self-improvement of a person;
• interactive games, which are the number one consumer area of MEIOR;
• music;
•films;
• integrated interactive intelligent actions.
Technologies for supporting animation and 3D graphics

Discussions

Animation is one of the modern forms of presentation of graphics in electronic publications. At first glance, animation is similar to a video film, but it is fundamentally different from it, since it deals with inanimate drawn objects. Sequential playback of linked images at a frequency exceeding the fusion rate results in a fusion effect of the dynamics of the images. Each image in the animation appears as a frame. Frame images can be created in the environment of traditional graphics packages that support GIF format and include background images and drawing objects. For example, in the graphics program Photo shop, individual frames are created in layers.
This approach resembles animation. Images in a sequence of frames must be linked. This connection is conditioned by the need to smoothly change the position of objects in the image field, their scale or movement of elements of the image object. In animation, to create the effect of movement, the drawing of each subsequent frame is used. Actually, this approach can be implemented in computer animation. In this case, you have to draw in a certain software environment, which potentially simplifies this process. For these purposes, 2D and 3D graphics programs can be used.
Graphics animation programs for the Web include: Animagic GIF (Right to Left Software), GIF Construction Set (Alchemy Mindworks), Microsoft GIF Animator (Microsoft), PhotoImpact GIF Animator (Ulead Systems), VideoCraft GIF Animator (Andover Advanced Technologies), Web Image for Windows 95 (Group 42) and many others.

These and similar animation software tools provide the animation creator with a fairly versatile toolkit for processing, editing, manipulating, and composing GIF images.

The process of creating an animation can be divided into two important components - its creation itself, and then optimization. The creation process involves selecting a sequence of frames and adding them to the generated GIF file. At the same time, animation programs from Ulead, Alchemy Mindworks and Microsoft allow you to add frames not from a graphic file, but from the clipboard. As a result, the image is transformed as the frames follow, and there is no need to save each frame.

In the Ulead GIF Animator program, animation is built on the initial and final image using one of a number of effects, for example, the flow of a new picture over an old one, a sheet of paper change, etc.

After the frames are collected into one file, the placement of control blocks begins. After finishing the arrangement of the cartoon, the file can be inserted into the electronic document as a normal image.

Animation software usually requires a lot of computer memory. Therefore, a special control file (usually an EXE file) of a much smaller size is created to play the animation.

Any image in computer graphics is encoded as a figurative-spatial representation of its elements. In this case, the current location of each image object or its elements is set by the corresponding coordinates. Therefore, it becomes possible to use the mathematical apparatus to automate the processes of preparing animation. For example, it becomes possible to automatically create intermediate frames of animation images based on the use of interpolation and extrapolation methods. In this case, you can set the extreme points of movement of the object's elements, indicate the number of frames during which this movement is carried out, and the rest of the transformations can be performed directly in the morphing program. This is how you can imitate the movement of a person, smoothly transform one object into another, the face of one person into another, etc.

The above packages and software are relatively simple, however, the most popular animation packages are: Macromedia Flash, Macromedia Director and the domestic MEIOR package Hyper Method.

Note that Flash technology has become the de facto standard for vector graphics and animation on the Internet, and ShockWave technology is one of the promising technologies for working with MEIOR.

Programs that allow you to combine individual pieces into a single complete whole multimedia application can be roughly divided into three groups:

- specialized programs designed to quickly prepare certain types of multimedia applications;
- copyright multimedia tools;
- programming languages.

The line between these three types of programs is gradually blurring, but still quite noticeable. The first group of programs is used to create presentations and publications on

the Internet. For the development of other types of multimedia products, the second and third options are possible.

Multimedia authoring tools occupy a place between multimedia presentation programs and programming languages. The division between multimedia presentation programs and authoring tools is rather arbitrary. In general, we can say that the former are focused mainly on the transfer of information in one direction (from the computer to the user), and the latter are used to create software products with a high degree of interaction with the user.

Conclusions

Using copyright means saves money and time, but the program's performance will be lower. Programming is a more expensive and time-consuming way, but it gives more opportunities to implement the author's idea. Authorship systems offer a scripting language programming environment for user interface development. What distinguishes them from real programming languages is their limited capabilities. At the same time, quite a few systems have recently appeared in which programming, even in a specialized, but nevertheless, programming language is not mandatory, but serves as an addition to the capabilities of programs to create an application on a computer screen.

Thus, the task of choosing the necessary development tool for a multimedia application is not as simple as it seems at first glance, and it does not have a universal solution suitable for all occasions.

Reference:

1. Dzhashitov V.E. Multimedia information and computer technologies in scientific and educational courses of lectures and express control of knowledge in the exact sciences // Information technology. - 2018. - No. 1. - P. 44-48.

2. Kiselev S. V. Means of multimedia: study guide / - Moscow: Academy, 2019. - 64 p.

3. Krapivenko A. V. Technologies of multimedia and perception of sensations: a tutorial / A. V. Krapivenko. - Moscow: BINOM. Knowledge Laboratory, 2009 .-- 272 p.

4. Polat E.S. Modern pedagogical and information technologies in the education system. Textbook for students of higher educational institutions / Publishing Center "Academy", 2017 - P. 368.