

Multimedia Technology and Its Application in Courseware Making

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Abstract: *The multimedia technology is one of the most advanced information display technique in modern educational technology. It has been widely used in college education and teaching. It is also welcomed and favored by teachers and students for its diversity and information media integration, interactive and real-time. Based on a brief introduction to the basic concepts of multimedia technology, the paper introduces the basic elements of multimedia and their specific applications in multimedia courseware making.*

Key words: **modern educational technology; multimedia technology; multimedia courseware**

0 Introduction

With the rapid development of computer network technology and information technology, multimedia technology, as one of the most advanced information presentation techniques in modern educational technology, has been widely used in the field of education and teaching, especially in the course teaching of colleges and universities. Because of the characteristics such as diversity, integration, interactivity and real-time and so on, it can integrate the text, graphics, image, audio, video, animation and other information media, so it is more and more popular among teachers and students.

The outline of the national medium and long term education reform and development plan (2010 - 2020) clearly points out that it is necessary "to improve teachers' application level of information technology, update teaching ideas, improve teaching methods and teaching results". Therefore, on the basis of brief introduction of the basic concepts of multimedia technology, this paper focuses on the introduction of the basic elements of various multimedia and its application in the production of multimedia courseware.

1 multimedia technology and courseware making

Multimedia technology is a new technology based on digitalization, which has the ability to comprehensively process characters, graphics, images, audio, video and animation. It is a comprehensive technology based on computer technology, including digital information processing technology, audio and video technology, artificial intelligence and pattern recognition technology, communication technology, graphics and image technology, computer software and

hardware technology. It is an interdisciplinary, integrated and developing new technology. Multimedia includes basic elements such as text, graphics, image, audio, video, animation and so on. When making multimedia courseware, we should take full consideration of the functions, characteristics and advantages of various media elements, and organize and combine them properly, which can not only visualize the content of the course teaching, but also transfer the new educational ideas and design ideas. So that students can complete the course learning task in a relaxed and pleasant environment, and at the same time, they can continuously improve students' interest in learning and autonomous learning ability.

1.1 Media elements in multimedia technology

(1) Text

Text refers to all kinds of text and symbol information, including the font, font size, font, color and other format information of the text. Text is the most basic media element in multimedia courseware, and is the basic form of information expression and transmission, which is mainly used for the descriptive representation of knowledge content. In the design of multimedia courseware, through the reasonable organization of the layout and display of text structure, we can better transfer the course information to students.

(2) Graphics and images

Graphics generally refers to the pictures made of line, arrow, rectangle, circle, curve and other basic graphic elements, which are drawn by drawing software. In the graphic file, the instruction attributes (such as the size, position, shape and color of the graphics) are stored in the form of vector graphics files.

Image is one of the most important forms of information in multimedia courseware, and it is the key factor to decide the visual effect of a multimedia courseware. Image is a real scene captured by scanner, digital camera, camera and other input devices. After digitalization, image is stored in bitmap format.

In multimedia courseware, by adding media elements such as graphics and images, it can not only enrich the content of courseware, but also change the monotonicity of long text courseware, so as to give students the intuitionistic feeling and reduce the fatigue of learning.

At present, the common image file formats are: BMP format, JPEG format, PSD format, CDR format, TIFF format, GIF format, and so on.

(3) Audio

Audio is one of the most convenient and familiar ways that people use to convey information and feelings. In multimedia courseware, audio includes voice and effect besides music and speech. The integration of audio signals into multimedia courseware can provide any effect that other media cannot replace, not only to enhance atmosphere, but also to increase vitality. Audio enhances the understanding of information expressed by other types of media.

At present, the common format of audio files are WAV, MP3, MIDI, AAC, AIFF, VOC and so on. Among them, WAV is the audio format provided by the Microsoft Windows. Because of the influence of the Windows, this format has become a de facto universal audio format. At present, all audio playback software and editing software support this format and use this format as one

of the default file save formats.

(4) Video

Video is a kind of image data. It has time sequence and rich information connotations, which is formed of a series of linked image data. Computer video images can come from video signal sources such as video tape, video camera and so on. These video images make multimedia courseware more powerful, more exciting and more attractive to students' attention.

At present, the common video file formats are: AVI, MOV, RM (Real Media), etc. Among them, MOV format has been widely recognized by the industry because of its cross platform and small storage space requirements. In fact, it has become an industrial standard in the field of digital media software.

(5) Animation

Animation is playing a series of continuous movement and change of graphics and images based on the characteristics of human visual retention. Animation is in essence a rapid continuous play of a static image, including the special effects of zooming, rotation, transformation, fade in and out of the picture, so it is especially suitable for describing the process related to the change of state. The abstract content can be visualized to make many unintelligible teaching contents lively and interesting, and the rational use of animation can achieve twice the result of half the effort through animation. For example, the sorting of array elements by a series of animation shows that the student can intuitively feel the whole process of the array elements moving and changing in order, and it is easier to understand the basic principles of the sorting algorithm.

At present, the common formats of multimedia animation files are GIF format, SWF format and so on.

1.2 Software for making multimedia courseware

PowerPoint is the most commonly used for information presentation in multimedia courseware production, and has become an important part of classroom teaching. PowerPoint is made up of a series of slides, which can play a static file into a dynamic file, make the complicated problem easy to understand, make it more vivid, and leave a more profound impression on people.

The fine PowerPoint file should not only have the necessary material, such as characters, graphics, images, charts, tables, audio, video, animation and so on, but also for the producers to master the production skills of the presentation. Of course, the unique artistic talent can add a sense of beauty to the PowerPoint and create new visual effects.

At present, the most commonly used presentation software is one of the important components of the office software series produced by the US Microsoft Corp.: Microsoft PowerPoint. Using Microsoft PowerPoint can produce illustrations, and can also insert audio, video, animation and other multimedia elements, and set animation, switch effect, and so on, which makes it more attractive. Users can not only demonstrate on the projector or computer, but also print out the presentation and make the film so that they can be applied to a wider field.

In addition to using Microsoft PowerPoint to make a presentation, there are some excellent presentation software, such as the WPS demonstration (Kingsoft Corp.), the speed Office demonstration (Beijing sea time development) and so on, and its demonstration function is also

very powerful and compatible with the Microsoft PowerPoint format.

In addition, Prezi is a kind of cloud-based presentation software that allows users to create and edit online on the Prezi web site or on the client side (Windows, Mac, iPad, iPhone). It make the idea more lively and interesting through zooming and quick action, which breaks the single Line timing of the Microsoft PowerPoint, and uses a systematic and structural integration to demonstrate, presents in the way by pulling from one object to another object suddenly, results in more visual impact with rotation and other movements.

2 Conclusion

Multimedia technology has been widely used in modern teaching. On the basis of brief introduction of the basic concepts of multimedia technology, this paper mainly introduces the basic elements of various multimedia and its application in the development of multimedia courseware. The application of multimedia technology to the design and production of multimedia courseware not only enriches the presentation of teaching resources, improves the students' interest in learning and learning, improves the quality of teaching, and also has a certain promoting effect on the cultivation of students' self-learning ability.

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