

Badminton's Multimedia Courseware of Interactive Design Based on the MOOCs Mode

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Abstract. Interactive play an important role in the design of multimedia courseware. The multimedia courseware in this paper is based on the platform with PowerPoint 2010. It completed and implemented by PowerPoint. It is the most common software to make courseware; its interactive interface is friendly; it has simple operation. I use VBA technology to design the aspects of interactive and achieve the design about human-computer interaction of sports multimedia courseware and make a combination with computer multimedia technology and physical education teaching. What's more, it provided the means of applied computer technology for Physical Education. It has the promotion of high value and widely used.

1 Introduction

MOOCs originated in twentieth Century 60's Douglas Engelbart proposed a research project, begin to implement from 2008, the earliest practice at Harvard university and Stanford university. However, the concept of MOOCs China introduced only in the past two years. This new online course development mode, change the past the traditional network that release resources, learning management systems and learning management system and more integrated open cyber source of the old curriculum development model. The MOOCs teaching mode impact mode reform of China's higher education, physical education in the institutions of higher education for the special education mode also will be faced with tremendous change. This paper study the interaction design of college sports technology curriculum MOOCs mode and college sports curriculum multimedia teaching technology type [1–4].

2 MOOCs Teaching Mode

2.1 MOOCs New Teaching Mode

The MOOCs teaching mode comes from the basic connectionist theory and network learning, which is different from the traditional teaching mode (teach + Learning) and the current open teaching form, is composed of M (Massive) +O (Open) +O (Online) +C (Course) four factors combined to Fig. 1, is a brand-new teaching mode. It brings in

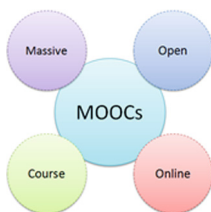


Fig. 1. The composition of the MOOCs teaching mode

the promotion of Global Institute is not only to the traditional teaching mode of impact, also is to reform the teaching system of China's vibration [5, 6].

2.2 Traditional Sports Curriculum Teaching Mode

Mao Zhenming has such a definition of sports teaching model in physical education teaching theory: Sports teaching mode of physical education is set up in a sports teaching thought and theory under the guidance of the program, which includes the structure of teaching process is relatively stable and the corresponding teaching method system, mainly reflected in the design and implementation of physical education teaching on hope and the conception of physical education teaching model consists of three basic elements: namely the guiding ideology of teaching, teaching process, the structure of corresponding law system. This relationship between the three is: the structure of teaching process is the support of the teaching model of "skeleton"; teaching method system is filled with the teaching process of "muscle"; and the guiding ideology of teaching is embedded in the "skeleton" and "muscle", and play the role of coordination and command of the role of the "nerve". The guiding ideology of teaching (neural) embodies the theory teaching mode; the structure of teaching process (skeletal) reflects the stability of the teaching mode; teaching method system (muscle) reflects the sports teaching mode of visual and operable sports.

Sports teaching mode while in constant innovation, but the traditional skill type sports teaching mode, physical education teaching system of teaching motor skills as the main objective [7, 8].

3 The Design of Multimedia Courseware Interactive Link

3.1 The Design of the System Structure

The multimedia courseware interactive design includes video, explanation and practice constitutes three parts, multimedia courseware interactive link design structure diagram in Fig. 2. The three part of the functions are as follows:

- Video insertion: video display, video dynamic on-demand, video capture and real-time display.
- Automatic explanation: TTS language reading.
- Exercises and Tests: Review module, Exercise module, Test module.

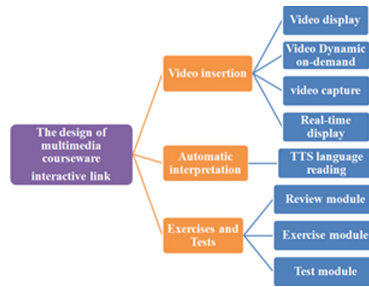


Fig. 2. Multimedia courseware interaction design structure diagram

3.2 Interactive Video Design

Interactivity is the most important difference between the multimedia courseware and other teaching media and teaching material. Multimedia courseware interactivity manifests in no hurry to use more rich media to show the form of content, but also can flexibly control the frequency and order of contents appear, show different content and the feedback information to different learners. In MOOCS mode, can be used to reflect the form of interactive means. Teaching in the course of interaction is very important, especially the sports teaching course. The point of this design is in the video interaction, according to the MOOCS mode of sports curriculum multimedia playback function is described in detail.

First of all, the general solution of video is a video display, especially for the sports teaching in Colleges and universities of media courseware, analysis of all kinds of video insertion methods and advantages into play, and interactive link and the design of the video. In PowerPoint software making video courseware in many ways, the use of controls also many, control method is a ideal method. Using this method, there are many options button, for example: Windows Media Player and Shockwave Flash Object. Windows Media Player controls can be used to any audio and video playback of the controls support, Shockwave Flash Object controls can be used to play the animation file. This design uses the control is a Windows Media Player, set up a video path and file name in Windows Media Player control properties, but also can set the playback control bar, the playback slider bar and video attribute bar, making courseware content and insert video better combination.

Secondly, we choose a personalized video playback control, to realize the use of VBA technology. Video control tools mainly with play, pause, fast forward, rewind and end control functions of playing control tools, which use Textbox, image, multi page control objects to display, the playback control tool of various control buttons.

3.3 Dynamic On-demand Video

The traditional video production is to insert a video page, sports training standardized action and scientific methods, so in the multimedia courseware of physical education curriculum, we need a large amount of video data as a reference. For example, badminton project, a set of training video less including more than a dozen video more

than 100. If in accordance with the previous slide insert a video to make courseware, will bring the huge workload. This is not only time-consuming and laborious, but also increases the size of the courseware, occupy more storage space to load and run speed slows down, the more important is, when multimedia courseware playing, only in accordance with the insertion sequence prior video is also in accordance with the multimedia courseware playing sequence playback. If you want to skip a video, or go back to view a video before, the operation is very troublesome, so bring a poor interaction, and dynamic video just can solve this problem.

In the interface design, the main part of the page is a video playback window. Below the video window is a combination of drop-down box, so as to achieve the realization of multi video playback in the leaflet in PPT. The video options displayed in the combo box, and the establishment of broadcast links.

3.4 Video Capture and Real-Time Display

Video capture and real-time display of the idea is for students to grasp the correct technical movement of badminton. Through the camera to capture the student movement and real-time display, compared with the standard action courseware, to correct technical movement irregularities.

3.4.1 Interface Design

Real time display interface is mainly composed of “turn on” and “turn off” two space button switch camera control, interface design is shown below in Fig. 3. To open the camera, the window on the left of the screen will display the real-time camera captures images. At the same time, the right side of the window as an example video, there are two control buttons below the window, were “display” and “turn off”, broadcast and control of the example video.

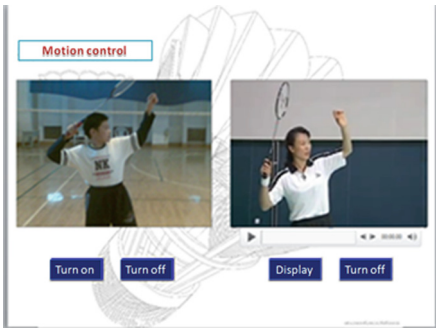


Fig. 3. Interface design

3.4.2 Realizing Method

At present, simple realization of real-time display function of VBaproject or insert Flash call camera method. Our design by means of selecting to insert Flash controls.

Create a SWF file, real-time video production to obtain the camera, you can use the Flash provided by the Camera class from the camera to capture video system. In the Flashplayer display, need to use the Video class of surveillance video, which added to the display list (Fig. 4). Detailed design steps are as follows.

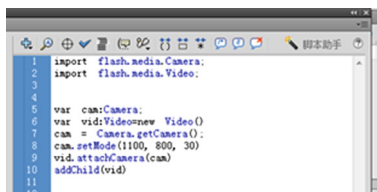


Fig. 4. Surveillance video class: Video()

First, create a named cam Camera class and a named vid Video class: `var cam:Camera;var vid:Video = new Video();` Use the Camera class `getCamera ()` method, create a connection with the computer camera: `cam = Camera.getCamera ();` Setting in pixels to capture video width and height, the default value is only 160 and 120. So, video interface width and height is set to 1100 and 800, the request rate for data capture camera set to 30 frames per second: `cam.setMode(1100, 800, 30)`. Then, use the Video class to the `attachCamera ()` method to real-time video capture is added to the Video object: `vid.attachCamera (cam)`, and Add an instance of the Video class to display the list of `addChild (VID)`, you can view real-time video image.

4 Conclusion

4.1 Design Highlights

Design of the interactive courseware should use the convenient and compact software, in which all kinds of text, pictures, animation, sound, video should constitute reasonable, more need to be illustrated, dynamic and static combination. The design of the innovation lies in the development of PowerPoint software using VBA technology, and the use of various control tools in development tools, such as buttons, text boxes, option box etc. The design scheme of multimedia courseware creating custom, increase the operability and interactive features, so as to change the design of PowerPoint courseware interactivity disadvantages of poor. We innovate design of video capture and display in real time, for students to grasp the correct technical movement of badminton. Through the camera to capture the student movement and real-time display, compared with the standard action, thereby timely correcting technical action irregularities. Through the real-time interaction, is students deepen impression, improve teaching effect.

4.2 Enhance Interaction Between Teachers and Students

With a lot of technical action in sports teaching materials, it is difficult for students to observe clearly the moment, teachers cannot pause and playback in the demonstration

process, which influence the teaching effect. By means of the camera to capture images of video contrast examples video, make students technical specification of action, to help students quickly grasp the learning content. Through interactive multimedia courseware, students can have a deeper understanding of action. The disadvantage is the lack of multimedia courseware can not realize the communication of teacher and student, the teacher will lose the leading role, teaching effect will be decreased. Through the interaction of the multimedia courseware, such as the use of video display real-time interactive settings, meet another form of interaction between teachers and students under the mode of MOOCs, can promote the teachers and students to teach and study enthusiasm, to build a bridge for communication between teachers and students, to strengthen the exchange of teachers and students, arouse the interest, so as to enhance the teaching effect. Today, E-learning and MOOCs the impact of the traditional education technology and education form, no matter what kind of education form is in order to better serve for the education.

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