Design of Online Basketball Course Based on WWW

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Abstract

Online physical courses based on WWW have special features. In this paper, taking the online basketball course as an example, we present the principles for design of online physical courses. The whole structures is established according to the course objectives, contents and media materials. Methods to design instructional contents, multimedia materials and user interface of online courses is discussed for physical education based on WWW.

1. Introduction

The main feature of physical education courses like basketball is practice out of door. With traditional instructional methods, teachers face some problems. For examples, they have not enough time to explain systematically the theories and methods about a course and not all teachers can exactly demonstrate actions of techniques about the course, etc. The WWW-based instructional technologies supply a solution.

With WWW-based instructional technologies, the theories and methods of physical education can be explained systematically in online courses, the actions of techniques can be demonstrated with multimedia materials, such as video clips which can be replayed by students in Internet, the learning materials can be updated conveniently by teachers, much more references in Internet can be linked into online courses to enlarge the learning space of students[1].

In this paper, taking the online basketball course as an example, we discuss the design principles, whole structures, and methods to design instructional contents, multimedia materials and user interface of online courses for physical education based on WWW.

2. Design Principles

Constructivism [2] promotes the view that learning is an active process in which learners construct meaning, going beyond the information given and discovering principles for themselves. Based the learning theory of Constructivism, we present the principles to design online courses for physical education based on WWW as follows.

? The students are main roles in instructional activities.
? Learning circumstances is more important for students to construct meaning than teaching circumstances.
? Collaborative learning activities are able to help students get more knowledge than single learning activities.
? Supporting students learning is more important by using all kinds of information resources than supporting teachers instructing.
? Teachers should play more active roles in guiding students learning www-based instructional environment.

3. Design of Whole Structure

The whole structure of online basketball course is designed according to the course objectives, content and media materials. The online basketball course includes six parts: history, basic skills, elementary tactics, body quality, game rules, sport Injure, basketball sport websites.

4. Design of Instructional Content

4.1. Extension of Learning Content

In the online basketball course, a large of extensive learning materials are supplied to students who can learn the basketball theories and techniques by themselves with these materials based on Web. These materials include not only the contents which are necessary to be understood by all students, but also almost all basketball theories and techniques which are very useful to the students who are interested in basketball sport. In addition, many basketball sport websites are linked to the relative learning context in the online course.

4.2. Update of Learning Content
The learning materials need to be modified and enlarged dynamically by teachers according to the opinions which are presented by students in their learning process.

4.3. Concise Structure of Learning Material Units

The learning materials need to be organized with a concise structure to meet students to learn by themselves based on Web.

4.4. Multimedia Materials

The learning materials not only include traditional texts, but also involve a large of multimedia elements, such as images, animations, audio and video clips.

5. Design of Multimedia Materials

Different instructional media can encourage learning process in which students construct the meaning in terms they personally understand. In addition to design of each kind of media element, we pay more attention to hyperlinked multimedia incorporating a variety of media, which can facilitate students understanding process [3].

5.1. Design of texts

The texts are used not only to explain instructional content in the online basketball course, but also to show the process of explaining content clearly. For an example, to introduce a technique action we divided the texts into six parts, i.e. the method of action, the key point of action, difficulty of action, common mistakes, correcting methods of the mistakes and the methods of exercise. Some marking characters are edited in the above content scripts to show the hypertext points which will be used by programmers. The scripts are edited with MS-word. The words of the scripts are usually 3-5 times more than traditional teaching materials.

5.2. Design of images

The images are classified into two kinds. One is called photo which is scanned into a computer to show real technique action. Another is called graph which is drawn on computer to show scheme of action’s process.

5.3. Design of animations

The animations are very useful to illustrate many movement processes. In online basketball course, elementary tactics are explained through animations with voice. The animations are able to show the methods and lines of co-operations among players.

5.4. Design of audio materials

Because of the bandwidth limit of Internet, using too many audio materials could cause bad performance of online courses. So, audio is usually used in the place where it is especially needed, such as the voice explanation in a clip of animation and video.

5.5. Design of video materials

Video clips are used to exactly show technique actions and tactic processes. In these video clips slow movements are designed to help students see high speed actions more clear. Many clips of real games is cut and edited to show how these techniques and tactics are applied by basketball player.

6. Design of User Interface

The user interface controls how the user interacts with the online course. Multimedia with hyperlinks can produce an interactive interface, which let the user to be more active than traditional media such as books and television. The graphical users interface of the online basketball course is developed based on the MS Windows operating system.

According to the whole structure of the online basketball course, the user interfaces are divided into three layers. The first layer is home page of the online course. The second layer is content selecting menu. The third layer is content explaining interface.

7. Conclusion

Online physical courses based on WWW have special features. In the paper, taking the online basketball course as an example, we suggest that the design of online physical courses are based on the learning theory of Constructivism. The whole structures is established according the course objectives, contents and media materials. Methods to design instructional contents, multimedia materials and user interfaces of online courses is discussed for physical education based on WWW.

[1] Zhang Yingjie, el. Designing Online Instructional Environment for Physical Education Based on Web, Proceeding of 2001 ICCE, Seoul, Korea