Application of Multimedia Network Teaching Platform in College Physical Education

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Abstract: In this paper, combined with the problems of traditional physical education in Colleges and universities, the application of multimedia network teaching platform in physical education. With the help of this platform, we can realize the organic unity of contemporary teaching and traditional teaching. Combined with the basic concept and historical development of multimedia network teaching, this paper expounds the composition and characteristics of college sports multimedia network teaching, and explores the application of multimedia network teaching in college sports. It is found that the application of multimedia network teaching platform in college physical education can promote the liberalization of College Physical Education and the standardization of physical education examination. Finally, the purpose of strengthening the effect of physical education is achieved.

1. Introduction

With the rapid development of science and technology and society, saving people's time and space and facilitating people's study and life have become the design tenet of science and technology researchers. In order to save the educational space and optimize the teaching staff, the curriculum education platform using Internet technology came into being [1-6]. The original network distance education was based on postal service and radio and television. With the development of multimedia technology and computer technology, the current remote network education is a new education mode based on Internet technology [7]. But for the distance physical education, the domestic scholars and experts research less. However, due to the need to provide larger venues for sports activities, and the classification and borrowing of sports equipment is complicated, school human resources have not been more reasonable use. Therefore, in view of these development status, this paper designs and develops a distance physical education platform based on Web and B/S structure.

The progress of information technology and the continuous development of computer provide

the possibility for the network management of physical education teaching, which can effectively promote the transformation of college physical education teaching management from traditional mode to network teaching and management mode, so as to provide flexible, advanced and personalized teaching methods, and effectively improve the efficiency of College physical education teaching and management [8]. However, although the network teaching has many advantages over the traditional teaching, due to the practical and interactive requirements of physical education teaching, as well as the neglect of physical education subjects compared with ordinary teaching subjects, the process of network teaching and management of physical education in China is relatively slow, which needs to attract the extensive attention of physical education workers. Therefore, in view of the current sports teaching management mode is relatively backward, this paper designs and develops a set of sports teaching management system based on the Django framework of B / S structure, using streaming media and MySQL database technology. The system includes information release, online on-demand course, communication and Q&A, course management, score query and other functions, which can meet the needs of physical education teaching and management. After testing, the system runs well and all functions are normal, which can effectively improve the efficiency of teaching and management. And it can provide flexible and personalized learning methods, which has a certain practical value.

2. Technical Requirements and Analysis

(1) Flag object. Class to find out the object in the problem domain is the premise of understanding the problem domain. When building the object model, first find the objective existence of the problem domain object, and through the continuous screening of all candidate objects in the problem domain, we can get the useful object for the system. There are many kinds of objects in teaching management system. They may be an objective entity, such as students, or an abstract concept such as grade examination. After a careful study of the characteristics and contents of teaching management, we extract 16 object classes from the problem domain, and define the data dictionary of object classes in teaching management system. Such as department, teacher, teaching plan, teaching plan, etc.

(2) Marks the relationship between object classes. Connection is the interdependence and interaction between objects. By analyzing the relationship between objects, the edge of problem domain can be found. Through the analysis of objects and their relations, we can better understand the problem domain. For example, a department has several specialties, each major has a teaching plan, and each student belongs to a major. Aggregation is a kind of connection between the whole and the part, which represents the connection between the constituent classes as a part of things and the classes representing the whole of things. For example, the teaching plan is composed of teaching plan items, and the teaching plan of optional courses is composed of teaching plan items.

(3) Flag properties. The properties of objects represent the properties of objects in the class, and the properties of connections represent the properties of connections in relationships. The properties and connection properties of objects help us to understand objects and their relationships.

With the program framework (open source), more third-party plug-ins and common class libraries are integrated, which can effectively reduce repeated programming. Therefore, it has good maintainability and scalability. In addition, the framework has more general modules (users, login, etc.) and standard data types that can be directly used, which can effectively alleviate the low efficiency problems encountered in the process of web development, and is also the basic framework of the sports teaching management system in this paper. It is worth noting that the Django framework supports the model template view MTV design pattern, as shown in Figure 1. Among them, the model corresponds to the data access layer, which is mainly used for the

processing of data related transactions; the template corresponds to the business logic layer, which is mainly used to represent the processing of related decisions; the view corresponds to the presentation layer, which is mainly used to access, call the model and corresponding logic.
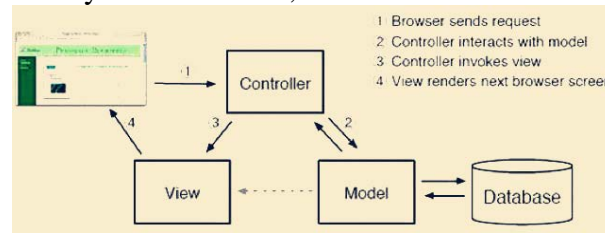

Fig.1 Mtv Design Pattern of Django Framework

B / S structure refers to the browser / server structure of software system, and is the optimization and improvement of client / server structure. Specifically, the server is subdivided into database and web server, and the client operates the system application with the help of browser. The specific transaction processing is placed in the background database and web server, and its three-tier structure is shown in Figure 2. It is easy to see from the diagram that the B/S structure is divided into presentation layer (for interface guidance, user input, service request sending and result display), business logic layer (for business logic execution and database request sending) and data processing layer (for data logic and storage process execution). It has low development cost, simple upgrade and maintenance, cross platform support, software and hardware requirements Seek the lower advantages.
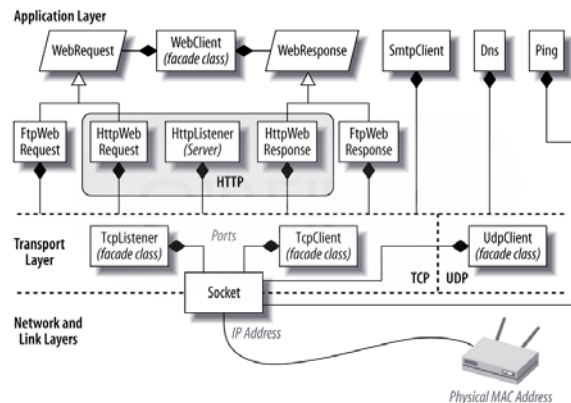

Fig.2 B/s Structure Diagram

MySQL database is a relational database management system based on Linux operating system, which is developed by database standard language SQL. It can store user information (registered user, password, etc.), configuration information (template, management authority configuration, etc.), content link (pictures, videos, etc.), etc. it has the advantages of small size, low cost, strong portability, high CPU utilization (multi thread and data parallel reading and writing), fast query speed, multiple supporting protocols and operating systems. Therefore, it is widely used in the database construction of small and medium-sized websites, which is also the database technology selected in this paper.

With the help of network, streaming media technology uploads the compressed audio, video, animation, text and other multimedia resources to the website server for users to browse and play directly on the website. Thus, it effectively avoids the traditional multimedia viewing mode of downloading and then playing, and has the advantages of small start-up delay, low system cache demand and real-time transmission, and plays an important role in the fields of network education, broadband video on demand, internet live broadcast, etc. In streaming media technology, FMS

server provides a platform for communication and interaction between users. It integrates the characteristics of streaming media, such as live video (on demand), video blog, online video communication, etc. At the same time, it also adds a fast and convenient development environment, which has the advantages of cross platform, scalability and strong performance, which is used by this system. With the help of FMS server, various multimedia files related to physical education can be processed. Combined with various application servers, users (management and users) can conduct real-time communication and interaction to meet the teaching and management needs of physical education teaching management system.

3. System Testing

In the process of development, this paper chooses Linux operating system as the development system, mysql2.5.6 as the database, django1.3 as the supporting environment, and googlechrome as the browser of the system. Because of the common features of each module in this system, the realization of login module, online on demand and answer module, user management module and curriculum management module is described and analyzed. Therefore, the user category selection is needed in the system login module.

After the user selects the user type and logs in, the internal program compares the account information and type according to the database data, and presents the judgment result and the corresponding interface to the user. Because the system faces more students, the system will give priority to the information of students when logging in; secondly, it compares the information of teachers. Finally, the information of the system administrator user is compared. Some of its implementation codes are as follows:

```
def user login(answer)
:
if answer.method == "ADMIN":
form = Login
load(answer=answer,data=answer.ADMIN)
capt = form['capt']
if form==valid()
:
return http://www.local address('type')
else:
return response('error/user login.html',{
'captcha"form"},context_instance=Answer Context(an
swer))
```

Because the student users need to be registered and approved before using the system, it provides the function of user registration. The module mainly realizes the management of user information (account, password, etc.) and permissions. Different interfaces are provided for users to choose according to the different user types. The system administrator can add, modify and delete the teacher and administrator account in the user management interface, and assign permissions to the students.

Students can search the required course videos in the video search box and learn by clicking the play button. In addition, students can communicate with teachers in the answer dialog box on the right to answer the problems encountered in the course learning. This module is mainly used for the course management of teachers (making the curriculum teaching plan) and the selection of students (optional or compulsory courses). Teachers can add, edit, delete and other operations for each PE course according to the syllabus; after the setting is completed, they can also check the information

of the courses by using the function of "course inquiry".

4. Conclusion

In view of the slow process of current physical education teaching network management, based on the Django framework of B/S structure, combined with streaming media and MySQL database technology, this paper designs and develops a set of physical education teaching management system. The system includes information release, communication and Q & A, course management, course online on demand, score query and other functions, which can provide support for students' independent and personalized learning of sports knowledge, and meet the requirements of physical education teaching for the interaction between teachers and students. After testing, the system runs smoothly and all functions can run normally, which effectively improves the teaching and management efficiency of physical education courses. It can meet the new era of physical education teaching and management requirements, has a certain practical value.

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