

## Research and Design of System Module of Sports Information Network Teaching

Gao Siyue and Liu Xiao

*Ministry of Physical Education Teaching, Shijiazhuang University of Economics,  
Shijiazhuang City, China  
gaosi\_yue@163.com*

### **Abstract**

*In recent years, new education model began appearing in a represented by network technology and multimedia technology in our country. Network teaching is more and more attention. Sport teaching is a bilateral activity, which is of strong practicality and participatory teaching and learning. Now the sports teaching resources on the network is less, and lack of systemic and integrity relative to other disciplines. Sports teaching content more action demonstration and imitation, which is suitable for use in the form of multimedia presentation. This thesis developed a physical network teaching platform to overcome the shortcomings of the traditional sports teaching. The platform provides the necessary for network teaching based on Internet network teaching environment and teaching resources for teachers and students. Teachers and students can realize man-machine communication through the network conveniently. In this paper, the system module is designed properly based on the different aspects of students and teachers, which ensure that the system can satisfy the teaching requirement over a longer period of time.*

**Keywords:** *module; sports teaching; information network; system design*

### **1. Introduction**

Along with the rapid development of science and technology, the application of computer related technology is more and more popular, the human society entered the era of information network and high-tech as the core of knowledge economy will dominate the development of the world economy. A country's comprehensive national strength and international competitiveness will depend on the education development, science technology and knowledge innovation level. With the rapid development of modern science and technology, society needs a large number of innovative talents. In this situation, the traditional teaching mode is more and more difficult to meet the needs of higher education. Society not only demands of education field leapfrog development, but also provides an unprecedented development opportunity for the modernization of education development.

At present, in the United States, 44% of high school to the whole society to provide all kinds of remote education accepts students of distance higher education accounts for about 32% of full-time undergraduate students. In recent years, the university distance education courses construction rapid development, up to 54000 kinds. Including 35000 kinds of undergraduate course, graduate courses 14000 kinds, non-academic degree course 5000 [1]. All the teaching activities and the education management are through the implementation of modern education technology, modern education technology almost become the only means of acquiring knowledge. Britain has a university called the Open University, it is a kind of whole society and the all-round Open University in the world. Execute an exemption entrance, integrate degree education and lifelong education of managerial mechanism, and adopt the credit system. Australian education institutions

equipped with first-class provide remote education college of TAFE, is a kind of to meet the requirements of modern remote education system of different education level. TAFE to combine with the record of formal schooling education and job training, to breakthrough the limitation of the traditional one-time education, established a "learn a work study repeated work again and again" the multi-cycle lifelong education mode, the Australian vocational education to the needs of society, more effectively and to serve the economic development and social progress in Australia. In February 1995, Japan introduced the basic principle of "advanced highly informationization society". Japan's ministry of education formulates the specific countermeasures based on this policy, at the same time pointed out that in education, the academic aspects of application of multimedia computer is a basic national policy [2].

As the important part of college teaching, physical education curriculum is focused by more and more attention and recognition. Students are no longer satisfied with general simple sports and physical education curriculum, and put forward a higher demand more scientific theoretical guidance for fitness and sports. Requirements of college physical education, sports, sports equipment, sports venues, the course content is higher and higher. This development trend makes the university physical education teachers and the classroom resources increasingly tense. Teaching resources level, quantity, scales become the bottleneck of development of school sports education. Many popular sports course due to get the favor of students is large in number, often crowded in the process of course selection and hope there are still many of the students' course selection are not being met. The traditional face-to-face, one-way, unified the progress of the class type sports teaching has far cannot satisfy the needs of the school sports teaching. In order to solve this situation, the sports remote network education necessary arises at the historic moment.

## **2. The Design Goal of Sports Network Teaching System**

Sports network teaching system is the student independent learning platform using the network teaching resources. The main object is teachers and students, whose main purpose is to exchange and learning, information query, teaching resources, teachers and students interaction. In order to meet the needs of the students and teachers, the network teaching system design should achieve the following main goals.

### **2.1. Target for Students**

The way of teaching high school students is active to construct knowledge meaning, them through the site resources, autonomous learning and obtain the content of the learning new knowledge. This kind of student-centered teaching mode is that the students as the main body of the whole learning process, to help students improve the ability of autonomous learning, and make students form a good ethos of collaborative learning, between all of these are an important foundation of network teaching system. Course construction is the most important content of network teaching system, its purpose is to set up a course production, release and maintenance of the triad network teaching platform. This platform should be consistent with modern education thoughts and teaching concept connotation in order to "autonomous learning, cooperative learning is complementary" for the idea, which can promote the interaction between the teachers and students is good, is one of the teachers as the main creator, students achieve a win-win platform of autonomous learning [3].

### **2.2. Simple to Operate**

Large amount of information is the distinctive features of the network teaching system, students, after browse the website based on the navigation bar, should be very quick and easy to find the corresponding the learning content into the learning state. Therefore,

considering a problem from the perspective of students is an important part of web design, the fastest to consider how they can browse to want information, maximum provides convenience for visitors. Interface design to friendly, intuitive web as far as possible concise, navigation easier operation.

### 2.3. Convenient Communication between Teachers and Students

Network has become an able to take advantage of the rapid spread of media because it can be interactive and real-time. Network teaching is an important part in the interaction between teachers and students, through E-mail, real time question-answering system, message boards and other information release and troubleshooting of real-time and non real-time. Network for the interaction is between the two sides to provide a quick communication environment with effective and convenient way to communicate. At the same time, the site should be timely make corresponding feedback to students' learning, in order to detect the teachers' teaching and students' learning results.

### 2.4. Extensibility is Good and Can Be Widely Used

The network teaching system based on open structure is easy to use and manage the system for all kinds of users, with the existing system can realize seamless docking so that it can be widely used.

### 2.5. Good Safety

The network teaching system should be fully considering the security of the system, the system should be strict management control in every link, can fully guarantee the safety of the system platform, and reduce the risk of system operation.

## 3. Function Design of Sports Network Teaching System

The purpose of sports network education platform is to provide users with a convenient online learning environment. To realize the function of the network teaching system is through the interaction between the server and the user's browser. In the network education platform of the system of sports store with all kinds of information and data, including the basic information, images of physical education and action technology demonstration video, sports teaching text data, the interaction between teachers and students, students and students message, network exam results, *etc.* All these data in the form of different format's data is stored in the database server, and the database server to organize and maintain. Figure 1 is a simple sketch application mode of network teaching system.

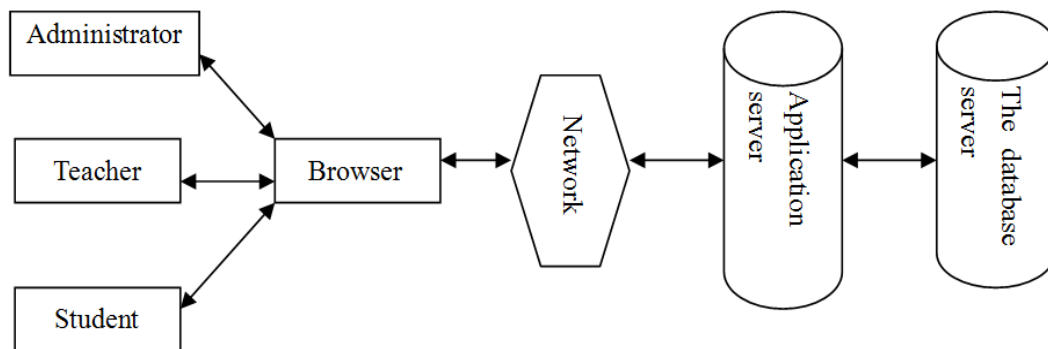
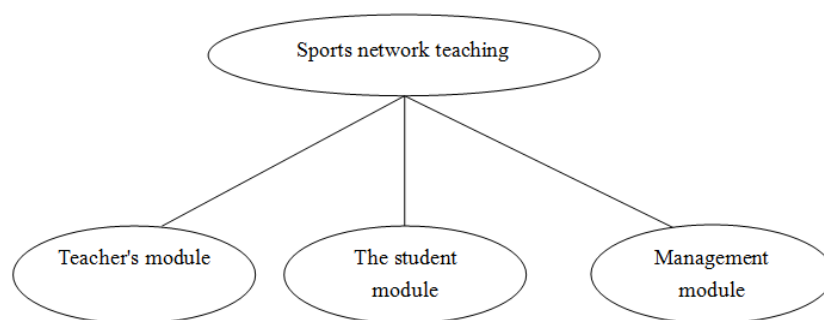


Figure 1. Application Mode of Network Teaching System

First of all to participate in the physical network teaching administrators, teachers and students have to connect to the Internet, which is in Figure 1 reflects the working mode, by their own browser sends a request to the application server application server based on the user's request to make corresponding responses, and if necessary to retrieve data from the database server, the response or retrieval services such as the result feedback to the user via a browser.

### 3.1. System's Overall Function Module Structure

Sports network teaching system is a comprehensive system of network teaching platform, based on overall analysis of the network teaching platform user demand, and in consideration of actual teaching and the application of the network teaching system is divided into three main function modules: system management module, teacher module and student module, as shown in Figure 2.

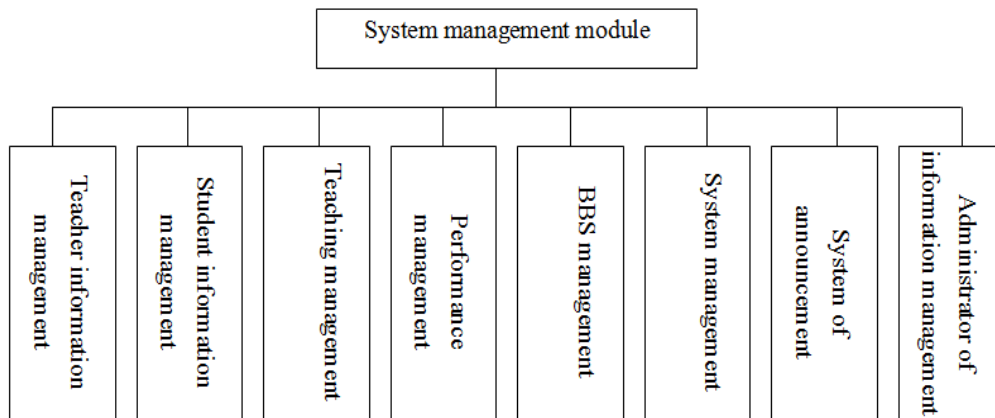


**Figure 2. Teaching System of Three Main Function Modules**

### 3.2. The System Function Module

Sports network teaching system has the three main function modules and is equipped with the corresponding modules respectively. When different identities of the user login system, the system automatically identify the identity of the user, and login to the corresponding interface.

**3.2.1 System Management Module:** System administrator login network teaching system, responsible for the safety of the system to carry on the management and maintenance, can add or delete course module of function according to the needs of the practical teaching, also has the function of managing users, such as add, delete, modify the user, and it can allocate different permissions to different users in order to make sports network teaching system safe and reliable operation. System maintenance personnel can updated the latest research achievements in the field of sports teaching and the introduction of dynamic at home and abroad through the system announcement. He can release system updates, course information, scores query *etc.* The system of various types of users has prompt effect of news and information. The comments by clicking on a BBS can module configuration, including whether to allow visitors to comment on, if I need to check, whether configure open authentication code *etc.* As shown in Figure 3, system management module is divided into the following several modules:



**Figure 3. System Management Module**

**3.2.2 Teacher-Function Module:** Teacher module is divided into two basic information and the sports teaching management module. Teachers' basic information can be divided into personal home page, contacts and personal information. Teacher prepares a lesson can be done online, complete the management of curriculum knowledge, upload or modify teaching materials. Sports teaching management part of teacher management module is composed of the following modules: teaching resources, curriculum management, grade management, teaching analysis, discussion of answering questions, students list, *etc.* As shown in Figure 4.

(1) Teaching resources: provide the resources you will need to write teaching plans, teaching tools needed to arrange teaching, academic papers, *etc.*

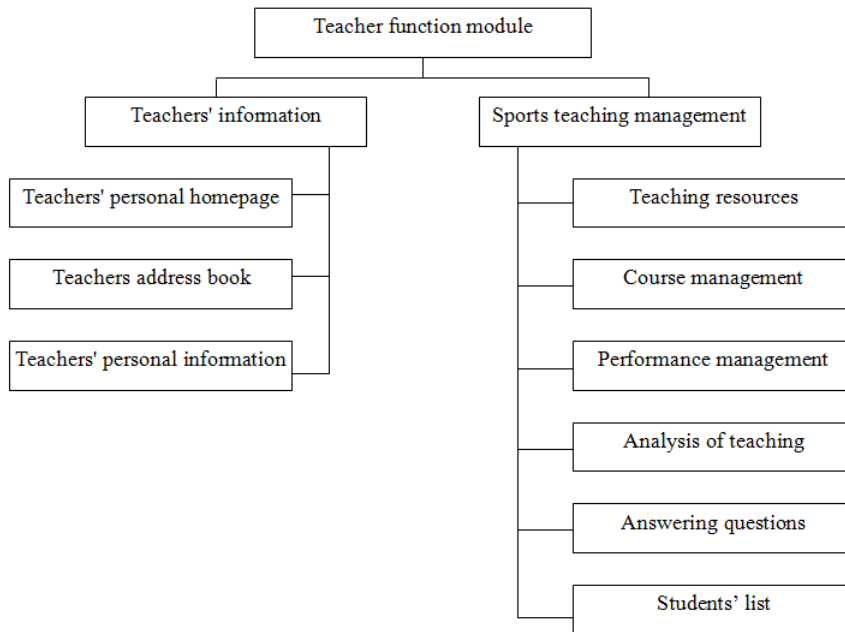
(2) Curriculum management: teachers can choose in this semester, the course modules have add, delete, modify permissions, such as course information update, modify, upload, also can always work out teaching plans, writing course outline, *etc.*

(3) Performance management: teachers can input, modify, statistics and query student achievement, students' homework and examination paper.

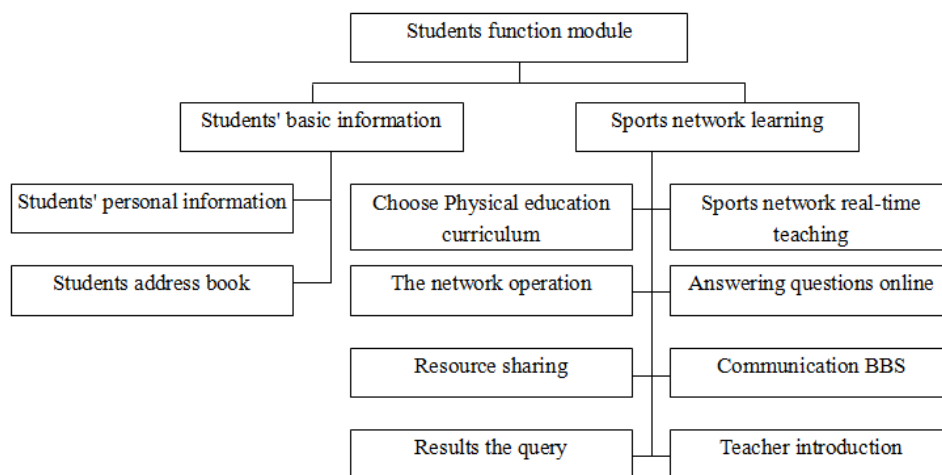
(4) Teaching analysis: [4] analysis the students' achievements of the periodic through data mining technology, to analyze the results to guide teaching.

(5) Answering discussion: Answering discussion part is part of the communication between teachers and between teachers and students communication, system in addition to providing the BBS, chat outside, also increased the academic exchange between the teachers and to help students answer questions guide part.

(6) Student list: The teacher chooses the courses later, who can statistics list what they teach students.



**Figure 4. Teachers Concrete Analysis Function Module**



**Figure 5. Students Concrete Analysis Function Module**

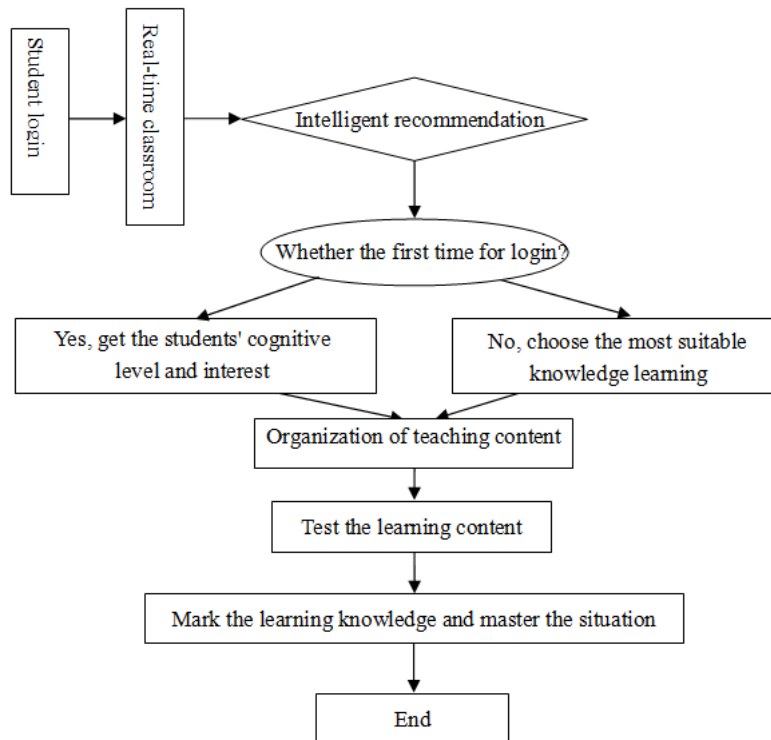
**3.2.3 Students' Function Module:** The main function of student module includes basic information and sports network learning. Among them, the sports network learning is divided into sports course selection, network teaching, network operation, real-time online question-answering, resource sharing, communication function such as BBS, scores query, teacher introduction, as shown in Figure 5.

In addition to the ability of online learning, students can also apply for a job or test in order to consolidate learning, also can upload useful resources Shared with other students, and also can realize the interactive communication. Learning function module is the main part of the complete physical network education teaching process, is also the most important means of the implementation of the sports network education. Its mission is to provide technical support to users, so that they make all kinds of sports teaching under the network environment.

(1) Sports course selection: Students enter student interface after successful login system, can view online all of sports information and choose their own interest or need to learn the sport.

(2) Sports network real-time teaching: After choosing courses, students can open the project's home page, the project technology study. Students in the real-time teaching module can choose text, voice, and video teaching. Video teaching effect is best, because the teacher and students is almost equivalent to face-to-face teaching, students can through the teacher's body language, expression more quickly master teacher professor of knowledge. Findings and the phonetic teaching effect by voice, the teacher to teach knowledge to students in a single voice way, the teacher may in conveying a certain knowledge point, in a single language cannot explain clearly, need to students' listen to repeatedly, to understand the knowledge taught.

In addition, the physical network teaching system can provide students with two learning modes: intelligent recommended mode and independent choice mode, the following to introduce the two learning modes, respectively.



**Figure 6. Intelligent Recommendation Model Flow Chart**

When students choose intelligent recommendation mode, the system transferred out for the student cognitive knowledge pages presented to the students. When students finish this knowledge, you can point to the current knowledge test after test can be carried out under standard point learning knowledge points, or need to continue to strengthen the knowledge of learning [5]. As shown in Figure 6, the intelligent recommendation mode is recommended for students require the following two cases to consider. The first is for the new student user first logs in, you need to get the student's initial level of knowledge and interests, these data mainly in the new user registration, user filled out by reading the student from the database this information is used to determine the initial cognitive abilities and preferences of its learning content. The second case is for the study of history has had student users, send the request directly to the teacher, the student teachers to learn

the history of the case, figure out the most appropriate next student knowledge dynamically to provide students with the next stage learning content. If the test is passed, students add new knowledge to the students' learning progress library and record students' degree of mastery of the knowledge based on test results. Intelligent recommendation mode is an enhanced mode of learning, when students finish the current knowledge, students need to work or test current knowledge point, only when the test standards, in order to proceed to the next point of learning knowledge. If the test is not compliance, students will continue to require repeated learning current knowledge, until compliance by far.

If students choose to learn to choose the mode, you can freely choose their own learning knowledge points of interest, the system does not perform stress test and repeated study [5]. Independent selection mode, will the entire course content in the form of chapters, and all presented by the students choose chapters of interest to learn. Systems based on knowledge of students selected to organize teaching content, generative learning interface and the interface on the left, and the currently selected display relevant knowledge or subsequent knowledge preamble sets for students to choose, at the end of the current knowledge of learning after the learner can choose whether to work or testing, if you choose, the system will generate questions or job-related knowledge for current students tested and the test results of students' cognitive evaluation, if the current knowledge already master, the system is responsible for recording the learning, including learning paths, answer *etc.*, and update learning progress, provide analytical basis for the students to learn the next recommendation.

(3) Network Job: The role of this module is for students to conduct a comprehensive job management. Students can choose different jobs based on the contents of the chapter to consolidate what they have learned. Such teachers by analyzing students' work will know the student mastery of the knowledge and under the circumstances of error, students display relevant knowledge content link. Meanwhile, the timely complete the expansion of the learning task.

(4) Online question & answer: In the learning process, if students encounter problems in the learning process, you can ask questions to the teacher education system through the network, through the system online to answer the teacher, the students in a timely manner to solve difficult problems.

(5) Resource sharing: Sharing resources sub-module, students and teachers are resource users, and also be a provider of resources, teachers need some resources for maintenance. Teachers and students can find teaching resources within the scope of this course has been released. Firstly, the role of either providing resources for teachers, can also be students, after the submission of resources can also delete the resource and filing operations such as the insertion of a public repository. Application for insertion of teachers to students to provide some public repository for review, approval and release of resources into the curriculum in public repository, so that teachers and students need the resource can be queried to this part of the resources of the. In addition to learning resources teachers can review the mandate and authority to submit the outside, but also bear the resources of public teaching this course for maintenance tasks.

(6) Rum: AC can be divided into text communication, voice communication and video communication. Video communication allows students to teacher face to face and solve problems faster and more convenient, voice communication allows students to more clearly describe the problem, and thus answer questions, written communication is more trouble, because a problem with the text description of it, someone else will have to understand the deviation sometimes need a few times to make it clear that is not conducive to the exchange.



(7) Achier Profile: Basic information published online teachers, curriculum vitae, job title, professional direction, the curriculum, so as to enable the students to choose their own or for their own teachers.

#### 4. Conclusion

Sports network teaching platform in physical education applications, which greatly improves the efficiency and effectiveness of school physical education work is enormous changes in the traditional model. Construct a suitable sports network teaching management system, both to bring convenience to the teacher in teaching, but also to enable students to have a strong motivation to learn, in order to mobilize enthusiasm for learning, improve student learning efficiency and further promote the sharing of learning resources. Sports Network Teaching in Physical Education, although the effectiveness and enthusiasm of the students significantly improved, but there are also some of its own limitations, and can not completely replace the traditional face to face education, it can only achieve some sports teaching objectives. Sports Network Teaching and Traditional Physical Education have their own advantages in the current hardware and software environment conditions, the Sports Network teaching as an independent form of teaching can not exist, and its role can only be a supplement and expand the traditional physical education. With the continuous improvement of the network and multimedia technology, the traditional teaching of Physical Education and Sports Network will be a better combination, sports network teaching platform will become more and more perfect.

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