The Design and Implementation of Network Assistant System for Physical Education

Junwa Yang
Zhengde Polytechnic College, Nanjing, China;
Email: 1209010138@qq.com

Abstract. Sports teaching is a bilateral teaching activity, reflected in the process of the practice is very significant, the teaching process teachers should also carry out explanation and demonstration, through the vivid teaching methods to deepen students' understanding, so that students have a higher and more comprehensive quality, adapt to future sports training and teaching, teaching more advanced the content of training and scientific research and management. The sports network teaching system in this paper, is based on the campus network, the Internet and other hardware based, and the efficiency of the network to play out, spread and the use of network teaching new teaching mode in the real sense, it is at this stage the industry needs to pay great attention to the problem and the solution. This paper describes the teaching effect of computer network technology in the sports teaching, and then combined with the specific application, detailed analysis of user needs; put forward the development scheme of PE teaching network aided system and Realization method. This system adopts the three layer system structure, good scalability, using modular design method, which is divided into teaching resources, online answering, course work and examination of four functional modules, easy to select the object-oriented ASP programming language, development environment and SQL Server database system extended the implementation of these key technologies include file upload processing technology, Active X programming technology and application, the file upload component development technology etc.

1. Introduction
The future of education will be the formation of a global and complete network of education and teaching system. The way to break the limits of time and space to promote the development of education, but also promote the renewal of physical education teaching model. Physical education of both factors, the most active in the new millennium sports and education. Therefore, the application of network technology to sports teaching, not only meet the requirements of teaching group construction, and meet the site network system of individual interaction, students and even the whole society of sports workers provide continuing education space, life-long learning; explore the new teaching mode of physical education in the quality of education and the two-way benefit cost, realize the network assisted teaching is a possible and the only way which must be passed as soon as possible. In the traditional sports teaching mode, using the knowledge and skills of communication between students and improve the quality of classroom teaching, mainly rely on books, and other media activities, which not only needs the high economic cost of equipment’s, and the scope of dissemination of knowledge and radiation is extremely limited, slower speed. Because students can only accept physical education in time and space fixed, students' freedom of choice is greatly reduced; they can accord their own interests and needs to choose the suitable curriculum and learning content. From the interaction between the students and the teachers
and students, the traditional sports teaching approach can provide them with information exchange, and the opportunity to teach each other is very limited[1]. This kind of restriction of time and space is the same to the students, and it is also the same for the physical education teachers. The traditional sports teaching, teachers' teaching demonstration, the students follow the practice in some difficult technical action teaching, teachers should have a technical level and demonstration ability is very high, it is very difficult to make the demonstration action specification, it will directly affect the students' learning effect. For example, there are many technical movements vacated, high-speed, flip in track and field teaching. It is very difficult for the students to see the movements of the moment, it is difficult to quickly establish a complete action image, and the teacher slowed down and affects the integrity and effectiveness of the action. Then the teacher only through repeated demonstration, repeated explanation, in order to achieve better teaching effect, to complete the teaching goal, but the final result is the impact of the teaching process, and too much explanation and demonstration is easy to let the students have wrong understanding. Practice has proved that under the condition of traditional school physical education, the enthusiasm and initiative of students to participate in physical education activities is not enough. One of the reasons is that their inner demands are not met. Students are eager to participate in physical education activities full rights and freedom, but the reality of the conditions often make their cultural learning, their physical and mental quality and the very limited sports conditions contradictory. Under the current education and teaching mode in our country, it is difficult for the students to maintain their physical education activities for a long time. Even in the time of physical education, students cannot release their enthusiasm for sports. Because of the low degree of participation caused by psychological "blocking", it is also an important reason for the current school physical education [2]. The main goal of this paper is using the campus network and the Internet and other types of network will be him, an auxiliary teaching system is set up, and based on this platform, teachers can take the specific activities of physical education and sports information published, spread information and news, etc., to carry out interaction with the students on the platform on the monitoring, testing and acquisition and related parameters of the physical fitness of students, enable students to cultivate a good healthy exercise habits; with this system, students can choose in accordance with their own conditions of physical education curriculum in accordance with their own actual physical condition, and independent design and develop training plans, make your life more healthy life habits and attitudes. At the same time, the teacher can be released on this platform every specific teaching content of each lesson, so that students are prepared to be more fully. Students can select courses using this platform, make the course more purpose, prevent the selection of courses and do not fit, it can more effectively improve the physical and physical quality of students; teacher of physical education teaching efficiency can be improved, the teacher organize sports activities will be more convenient, so as to make this platform play auxiliary the function of teaching. The following are the main contents of this paper: 1. to determine the functional characteristics of the network teaching system. Combined with the actual situation of teaching, a detailed analysis of the demand, to determine the design of network assisted teaching system to reflect the theory and practice of physical education in parallel and appropriate focus on the characteristics of practice. Study on the concrete technical scheme to realize the required function. The system adopts three layers architecture of B/S/D network, which is open and cross platform. In the design, the idea of data modeling is used to build the model. The system uses the current popular ASP technology, database management system using SQL Server2000. System design and database design. In accordance with the unique characteristics and functions of physical education, the system structure is designed on the whole, and the main function modules of the system are determined. The development and Realization of some functional modules are introduced. Students can select courses using this platform, make the course more purpose, prevent the selection of courses and do not fit, it can more effectively improve the physical and physical quality of students; teacher of physical education teaching efficiency can be improved, the teacher organize sports activities will be more convenient, so as to make this platform play auxiliary the function of teaching. Network teaching mode has its own characteristics and strengths, which can mobilize the enthusiasm of the students at the same time, the traditional mode thoroughly, drawbacks to the classroom, the teacher as the center can also be completely changed, the diversification,
for teaching form teaching with interactivity and scalability that have a role in promoting the teaching mode of it the reform and innovation of traditional sports teaching mode diagram as shown in Figure 1, the computer network aided teaching mode diagram as shown in Figure 2.

Figure 1. Schematic diagram of the traditional sports teaching mode.

Figure 2. Schematic diagram of physical education teaching mode based on computer network.

The modern education theory and multimedia technology, network technology combined with the formation of the network CIA environment is more respected in the field of sports teaching. Faced with such a big environment, Wang Lijun, Heilongjiang began to study the application of physical education in the network. They believe that the teaching mode of physical education has changed with the appearance of the network teaching system. First of all, in the network environment, computer assisted instruction with interactive and individual characteristics, change the passive position of students only listen, they have become the main body of the class, to actively participate in the classroom to find, find and solve more problems, effectively stimulate the creative thinking and independent consciousness; secondly, the teacher had been at the center of the classroom, the main task is to teach students knowledge, but in the network teaching system, teachers into the teaching process guidance, supervisor and organizer; finally, the teaching process also appeared a huge change, paying more attention to the nature of the interpretation course has become the construction of teaching resources in the teaching situation between teachers and students, promote communication and improve the new course participation and operation, makes learning Students can take the initiative to explore and understand knowledge, independent knowledge system[3]. The survey shows that in the field of sports information, sports "the fast transmission of sports web page column mainly includes physical exercise, sports competitions, but the number of these columns is not much, the content is not rich, and cannot meet the
needs of many college students. Many colleges and universities sports website update speed and update cycle is not satisfactory, the problem of delay is serious, sports information network communication lack of efficiency. Of course, this is only for colleges and universities, in the current higher vocational colleges, the situation are not optimistic. Due to the lack of understanding of the value of teaching and other reasons, the network teaching of physical education is lagging behind. With the rapid development of society, sports is reform to adapt to the needs of the new era of development, put forward higher requirements on its sports training object and physical education, and physical education object level and teaching objectives more determines the need for knowledge renewal and innovation.

2. The key technologies involved in the system design process

2.1. Database technology

Database technology is a core technology of information system. Is a method of computer aided management of data; it studies how to organize and store data, how to efficiently acquire and process data. Database technology is the basic theory of database structure, storage, design, management, application and realization method, and use these theories to realize the processing, analysis and understanding of the data in the database technology. Database technology is a software science of researching, managing and applying database. Object oriented database technology research and management of the data, so the specific content of the database technology involved mainly includes: through the unified organization and management of data, in accordance with the establishment of the corresponding database and data warehouse designated structure; mining system design can realize the data in the database for a variety of functions add modify and delete processing, analysis, understanding, report and print the data management and data mining application system using the database management system and data; and the application management system realizes processing, analysis and understanding of the data. Database technology is a core technology of information system. Is a method of computer aided management of data; it studies how to organize and store data, how to efficiently acquire and process data. Through the research on the basic theory of database structure, storage, design, management, application and realization method, and use these theories to realize the processing, analysis and understanding of the data in the database technology. Database technology is a software science of researching, managing and applying database. Database technology is an important part of modern information science and technology, and is the core of computer data processing and information management system. Research on database technology and solves the storage and computer information processing in the process of large amounts of data to effectively organize problems in database systems to reduce data redundancy, data sharing, data security data security and efficient data retrieval and processing. In the mid-1960s, database technology was used to solve the problem of file processing system. At that time, the database processing technology is still very fragile, often cannot be submitted to the application. In 1970s, the birth of the relational model provides the database experts with the standard method of constructing and processing the database, and promotes the development and application of the relational database. To today, database technology is being used in conjunction with Internet technology, in order to publish database data in the institutional networking, local area network or even WWW. Database technology is an important part of modern information science and technology, and is the core of computer data processing and information management system. Research on database technology and solves the storage and computer information processing in the process of large amounts of data to effectively organize problems in database systems to reduce data redundancy, data sharing, data security data security and efficient data retrieval and processing. The basic goal of database technology is to solve the problem of data sharing. The size of the two will be the development of the larger and larger, smaller and smaller. The so-called big, refers to the scale
of enterprise database. The first 10 years, most of the data stored in the database as a benchmark to measure GB, dozens of GB has been very large. And now, only the monthly amount of new data Guangdong mobile, it has been measured by TB, not 3 years, many companies want to store data to reach PB. More and more data, the need for larger database support, which is one of the direction of the development of the database. On the other hand, the database will become smaller and smaller. Today, the Sybase database has been installed in the high-end Casio watches, these watches are recorded in the weather, air pressure, the wearer's blood pressure, heart rate and other data. This database does not require a large amount of data storage, but requires a fast response in the case of low computing speed, but also to adapt to changes in the external environment. Changes in store mode from row to column. Before the database is stored in a row, the reason is very simple, users need to read and store data in a single. Today, simple data records are not enough to support the development of enterprises; companies need more data analysis and decision support. So, simply look at a record does not make any sense, but to all of the data is a statistical analysis, which is the concept of the column. In the case of China Mobile, hundreds of millions of users, the data of TB per month, which is VIP users, how to provide proper services according to their needs, for those users M-Zone, what should formulate preferential policies, in addition to the bill, cannot dig out their consumption characteristics, are more focused the business promotion activities? These, is not a data problem, and the need for frequent operation of the column. Expected, less than half a year, the major database vendors will be launched as a storage database. Unstructured data is still not included in the database. Here, we may think I'm against the tide, and now many database vendors can receive images, video and other unstructured data, Sybase how to stick with the structured data? In fact, I think, to unstructured data into the database, still need to be structured, only manufacturers this structured approach is not the same moreover, compared to the past has made great progress and improvement [4]. Previously, the way we record the image is to record the name of the file, if the name of the file referred to a person’s name, then the entire database query, you can find the picture. And this is very unscientific, because a lot of unstructured data file name cannot be completely. Well, now, we have structured unstructured data, in fact, is the use of structured data to describe the picture, such as the use of points and locations to record each pixel of the picture. And when you need to do a query, you can accord the combination of records to match the pixel, to meet the requirements of all the data to be filtered out, the database technology diagram shown in Figure 3.

![Database Technology Diagram](image)

**Figure 3.** Schematic diagram of database technology.

2.2. **MVC framework design**
MVC full name is Model View Controller (model) is the model view controller (view) - (controller) abbreviation, a software design model, a business logic and data display interface, tissue isolation method code, business logic will be gathered in a component inside, and improvement in interface and customization user interaction at the same time, do not need to write business logic. MVC is uniquely developed to map the traditional input, processing, and output functions in a logical graphical user interface. MVC is present in desktop applications, M refers to the business model, V refers to the user...
interface, C controller is used, and the purpose of MVC is to achieve code separation of M and V, so that a program can use different forms of expression. For example, a number of statistical data can be used to represent histogram, pie chart. The purpose of C is to ensure that the synchronization of M and V, once the M changes, V should be synchronized update. A view is an interface that users see and interact with. For the old Web application, the view is composed of a HTML element in the new interface, Web application, HTML is still in the view plays an important role, but some new technology including Adobe Flash and they emerge in an endless stream, like XHTML, XML/XSL, WML and Web services. MVC and some other markup language is good it can deal with many different views for the application. There is no real processing in the view, whether the data is stored online or an employee list, as the view, it is just as a way to output data and allow users to manipulate. Enterprise data and business rules. In the three parts of MVC, the model has the most processing tasks. For example, it may be used to handle the database such as EJBs and ColdFusion Components component object, model the data returned is neutral, that is the model and data format independent, such a model can provide data for multiple views, as applied to the model code only write once can be reused multiple views so, to reduce duplication of code. The framework, the design model of the two concepts are always confused, in fact, there is still a difference between them. The framework is usually code reuse, and the design pattern is design reuse, architecture is between the two parts, part of the code reuse, part of the design reuse, and sometimes analysis can also be reused. There are three levels of reuse in software production: internal reuse, i.e. in the same application can use the public abstract block; code reuse, is universal modules into a library or tool set can be used for multiple applications and in the field; application framework reuse, which provides general or ready-made basis structure for the special field, in order to obtain the highest level of reuse [5]. Although the framework and design patterns are similar, they are fundamentally different. Design pattern is to appear repeatedly in some environment problems and describe the solution to solve this problem, it is more abstract framework; framework can be expressed in code, can be directly executed or on mode multiplexing, only instance to use code representation; design pattern is smaller than the frame elements, one or more design patterns often contain a frame, the frame is always for a particular application, but the same pattern can be suitable for various applications. It can be said that the framework is software, and the design model is the knowledge of software. Struts have a set of mutually cooperative classes (components), Servlet, and JSP tag lib. Struts architecture based on the web application is basically in line with the design standards of JSP Model2, can be said to be a change in the type of MVC design patterns. Based on the above description of framework, it is easy to understand why Struts is a web framework, not just a combination of tag libraries. But Struts also contains a wealth of tag libraries and utility classes that work independently of the framework. Struts have its own controller (Controller), while integrating a number of other technologies to implement the model layer (Model) and the visual layer (View). In the model layer, Struts can be easily combined with data access technology, including EJB, JDBC and Object Relation Bridge. In the view layer, Struts can be combined with JSP, Velocity Templates, XSL, etc. These presentation layer components. The model is self-contained and is separated from the controller and view, so it is easy to change the data layer and business rules of the application. If the database is transplanted from MySQL to Oracle, or change the data source based on RDBMS to LDAP, just change the model. Once the model is correctly implemented, the view will be displayed correctly, regardless of the data from the database or the LDAP server. Because the three parts of the application of MVC are independent of each other, and one of them will not affect the other two, it can be used to construct a good loose coupling component. With the development of technology, more and more methods are needed to access the application [6]. MVC mode allows the use of a variety of different styles of view to access the same server code, because multiple views can share a model, which includes any WEB browser (HTTP) or wireless browser (WAP), for example, users can use the computer or by mobile phone to order a product, although the way of ordering is not the same, but the same way to order products. Because the data returned by the model is not formatted, the same component can be used by different interfaces. For example, a lot of data may be represented by HTML, but it may also be represented by WAP, which requires a change in the implementation of the view layer, while the control layer and the model layer.
do not need to make any changes. Because the data and business rules have been separated from the presentation layer, you can maximize the reuse of the code, the MVC framework diagram shown in Figure 4.

![MVC framework diagram](image)

**Figure 4. Schematic diagram of MVC framework.**

2.3. *Introduction to UML Technology*

UML is also called the unified modeling language is a standard modeling language, began in 1997 with a OMG standard, it is a graphical language support model and software system development, support model and visualization for all stages of software development, including the demand analysis to the specifications, to construct and configure. The development of object oriented analysis and design (OOA&D, OOAD) method in the end of 80s to 90s there was a climax, UML is the product of this climax. It not only unifies the representation methods of Booch, Rumbaugh and Jacobson, but also makes a further development of it. A method for describing the collection of objects and their relationships with Grady Booch. Object modeling technology of James Rumbaugh (OMT). Ivar Jacobson includes the use case method. There are other ideas also played a role in UML, UML is Booch, Rumbaugh, Jacobson. UML has been accepted by the object management organization (OMG) as the standard, the organization has developed common object request broker architecture (CORBA), is the leader in distributed object programming industry. Computer aided software engineering (CASE) products suppliers also support UML, and it has basically been recognized by all software development product manufacturers, including IBM and Microsoft (for its VB environment). UML from the different perspectives of the system, the use case diagram, class diagram, object diagram, state diagram, activity diagram, sequence diagram, collaboration diagram, component diagram, deployment diagram, such as 9 diagrams. These diagrams describe the system from different sides [7]. The system model integrates these different sides into a whole, which is convenient for the analysis and construction of the system. Although UML and other development tools will also design a number of derived views, these diagrams and other supporting documents are the most basic structures that software developers see. UML simplifies the modeling method; it abandoned the Booch, OMT or OOSE in the method of the dross, but the essence of other methods. UML generally does not introduce new concepts and symbols, only in the absence of existing solutions can be used for reference, UML developers are considering adding new concepts. The developers of UML in the design of a language (though only a graphical language), it must be concise (all elements are represented by squares and text) and complex (individual symbols for each element of the trade-off between). In spite of this, some new elements such as derivation and extension mechanism are added in UML, because these elements have been proved to be very useful in the practice of other modeling languages. The goal of UML is to describe any type of system in the form of object oriented graph. One of the most commonly used is to establish the model of software system, but it can also be used to describe software systems, such as mechanical systems, enterprise or business processes, as well as the complex data processing information system, with real-time requirements of industrial system and industrial processes, etc.. In a word, UML is a general standard modeling language,
which can be used to model any system with static structure and dynamic behavior. In addition, UML is suitable for the different stages of the system development process from the requirements specification to the system after the completion of the test. In the requirements analysis phase, you can use case to capture user requirements. Through the use case modeling, the external role of the system is described and the functional requirements of the system (use case) are described. The analysis phase is mainly concerned with the main concepts in the problem domain (such as abstract, class, object, etc.) and mechanism, which need to identify these classes and their relationships, and describe them with UML class diagrams. In order to implement the use case, collaboration between classes is required, which can be described by the UML dynamic model. In the analysis phase, only to the problem domain objects (the concept of the real world) modeling, without considering the technical details of the definition of system software classes (such as the processing of user interface, database, communication and parallelism problem). These technical details will be introduced at the design stage, so the design phase provides more detailed specifications for the construction phase. The UML model can also be used as the basis of the test phase. The system usually requires unit testing, integration testing, system testing and acceptance testing. Test different groups use different UML diagrams as a basis for testing: unit test class diagrams and specifications are used; use the component integration testing system testing diagram and collaboration diagram; use case diagram to verify the behavior of the system; user acceptance testing, system testing to verify whether the results meet the requirements identified in the analysis phase. UML is not a methodology that does not require any formal work product. It also provides several types of model description diagrams (diagram), which make it easier to understand the development of applications when used in a given methodology. The meaning of UML is far more than just a description of these models, but for the entry, these diagrams provide a good introduction to the basic principles behind the language and its usage. By putting the standard UML map into the work product, it is easier for a person who is proficient in UML to join the project and quickly enter the role. The most commonly used UML diagram includes: use case diagram, class diagram, sequence diagram, state diagram, activity diagram, component diagram and deployment diagram, UML structure schematic as shown in Figure 5.

![UML Structure Diagram](image-url)

Figure 5. Schematic diagram of UML structure.

### 3. System requirements analysis and design

#### 3.1. System requirements analysis

Due to the limitation of the traditional teaching by time and space, it is more and more obvious disadvantages: such as the class of small capacity, lack of communication between teachers and students, to facilitate the implementation of individualized teaching, and teaching methods of network aided
teaching environment compared with the traditional has the following advantages: sharing of cyber source. Internet is the world's largest inexhaustible Library of information resources, it is convenient access mechanism, fast data processing and other services also provide the convenience for the sharing of resources. Online teaching can break through the limitation of traditional education time and region, so that the educated can make full use of the abundant information resources on Internet. Flexibility of learning [8]. The network teaching environment for students to provide a more flexible way of learning, students cannot be confined by time and place, arrange the learning time and learning methods according to their own needs, complete the online homework and discussion, teacher counseling. Powerful interactivity. Internet via email, BBS, forums, chat rooms, to create a "virtual" learning environment for teachers and students, it is convenient to connect the teaching content, teachers and students, teachers and students among all kinds of face to face communication, which needs emotional communication and exchange of learning the. The richness of teaching methods. The network teaching system can integrate many kinds of teaching methods based on Internet, in addition to the traditional text, can also provide rich sound, animation, film and other audio and video resources, solve the traditional classroom teaching forms of mechanical problems, to further improve the students' interest in learning. Strong support for the new teaching model. At present, the education pattern is a hitherto unknown change from the traditional teacher centered teaching mode to "student-centered, teacher guided" teaching mode, teachers become designers of teaching and learning guide, and students are the main body of learning. Network teaching provides a good environment for the transformation of online resources richness and diversity on the one hand can improve the students' learning initiative, on the other hand, the students can choose learning content and learning progress, enhance the learning autonomy of students, conducive to the development of students' personality and improve the overall quality of students the learning efficiency can be improved greatly. In order to make the development of sports network teaching system more reasonable, first of all, the feasibility analysis of sports network teaching system. The feasibility analysis is usually called a feasibility study, is based on the premise for system investigation, analyze and discuss the possibility of the development of a new system of the necessity and feasibility analysis for the system, usually from the technical level, economic level and social level of analysis and research, so that the investment mistakes are avoided and provide guarantee for the successful development of the new system. For the analysis of the feasibility of the new system, the purpose is to determine the problem in the shortest possible time, and to determine whether the problem can be solved. Evaluation for the economic development of the network teaching system of sports, sports for the development of the network teaching system for college sports teaching quality improved with the help of a very important, at the same time, the development of the sports network teaching system in Universities in the scope of economy, therefore, the development of network teaching system has feasibility in the economic aspect of sports. For the development of the new system of technical feasibility analysis is mainly for the current technical conditions can be successfully completed the development of the system analysis [9]. Analysis of hardware and software to meet the needs of system development. The development of the sports network teaching system of three layer structure model based on the current Browser/Web Server/DBMS Sever, produced by ASP technology for dynamic website, the use of ADO technology, ASP database access to meet the demand, in addition, ADO provides users with any compatible with the function of ODBC database connection function, but also provides for the whole the function of database application program to create the function. The development of the program is simple, and has powerful functions. Therefore, the sports network teaching system development software technology platform has been relatively perfect and mature. With the rapid development of science and technology, the hardware, the hardware update speed of the rapid development of the hardware, either from the capacity or from the reliability have become more and more powerful, while prices are decreasing, based on this, the hardware platform for the development of the sports network teaching system to ensure its development needs are met. For the development of the sports network teaching system, educational administration of the school managers given strong support and development of the sports network teaching system, obtained the support and recognition of school leadership, management system and management method of current comparative science, has
the original data correctly, complete rules and regulations. Therefore, for the development of sports network teaching system, perfect rules and management methods will undoubtedly make the development of sports network teaching system to meet the security system. The learning theory of Constructivism requires learners to construct knowledge in the interaction with the environment, which highlights the importance of practical teaching. As to the practicality of the teaching system of sports network, on the one hand, it refers to the fact that the content of the teaching is practical. The curriculum design of sports network teaching system in the process of the creation of problem situations based process is related to the content of teaching situation, through the indirect experience for the actual problem, which makes the interest in learning to get promoted, and meet the requirements of the students to apply what they have learned. In the end, the learners can master the knowledge actively, so as to realize the construction of knowledge. In the software system, the description file is used as the use case, and the user describes the sequence of events occurring in the system by the use case of the software system. At this point the use case diagram to the purpose of the connection, which is to achieve a bridge between the end user and the system communication? Through the case diagram, the system is used to express the relationship between the participants, the use cases and the participants of the use case, and the system requirement analysis use case diagram is shown in Figure 6.

![System requirements analysis use case diagram](image)

Figure 6. System requirements analysis use case diagram.

### 3.2. System function module design

The sports network teaching system, because it is a kind of network teaching system, therefore, the sports network teaching system has the following functions: the sports network teaching system to meet the students' participation. The ultimate goal of the network teaching system is to promote the effective learning of the learners. With the rapid development of network technology, autonomous learners should construct teach through the network environment makes the learners to construct the cognitive structure, so that the active learning process of the network course in the improved. First of all, to stimulate students' learning motivation. For the construction, and points out that the knowledge is not based on teachers, learners based on a certain context is based on the social and cultural background, through the help of others, make full use of learning materials, the use of the meaning construction for access to
knowledge. Constructivism holds that the important premise for the learners to realize the meaning is to create the situation. Based on this, we can learn from the successful experience of online games. Network game is a big attraction for people, this is because the specific situation to the player, the player wins the conquest and motivation to get excited, therefore, for learners, learning content when the state with the completion of the game state, then for the learners, learning not only is the burden. At the same time, to be able to conquer and win conversion. If the student's learning motivation to achieve the conversion to the cognition of the driving force from the external driving force, then it will be the potential to stimulate learners; the network multimedia technology based on the real situation of simulation, so as to construct a good heuristic learning, learners' motivation for such a conversion from the external driving force to the driving force of cognition play a very big role, so as to study into the development of learner content. Second, the effective combination of autonomous learning and cooperative learning. The amount of information is very large, the rapid development of knowledge, if people want to gain a foothold in the society, must to effectively obtain information, so that their quality is improved, which is actually required for learners, autonomous learning ability is very strong. In the twenty-first Century education, "how to cooperate" is an effective way for people to obtain information, but also the basic quality of people in modern society [10]. If people want to achieve their own development, we must be able to achieve and get along with people, and human cooperation. Based on the learning condition, one of the most important measures for the cultivation of advanced cognitive ability is cooperative learning. For the network teaching, the students have to choose the content of the school, so as to carry on the discussion. On the one hand, not only the knowledge can be active access, while, on the other hand, the problem can be found, so that the learner's problem analysis and problem-solving ability to be improved. The network course has the characteristics of nonlinear and hypermedia, for learner autonomy, good design is the basis for network navigation; powerful interactive function, for learners to study cooperation provides the premise. In the cooperative learning of learners, the computer has great potential. As a matter of fact, cooperative learning is also a kind of autonomous learning for learners. It is a very important advantage to realize the combination of learner's autonomous learning and cooperative learning. Third, from the learner's point of view, the arrangement and organization of learning content. As for the network course, because of the multiple forms of the coal body, it is very important to the coal body and content. Coal forms are selected based on the analysis of learners to determine the content, select the media "order, at the same time, based on the perspective of learning for learning content selection, and resolutely avoid the teaching content is selected by the media. Based on the learner's choice of teaching content, the main body of the learner can be embodied, and the expression form of the media can attract the attention of the learner. The content of the network course of PE teaching system must meet the demand of value. For the network course teaching, its content should not only meet the general teaching content, but also make the changes caused by the network to be reflected. Therefore, the content of the network course of the sports network teaching assistant system must highlight the value. The value of the course content of the network realizes the teaching of knowledge and the effective learning among learners. Through the teaching content and the combination of the network, it shows the value of the content of the network course. First, for the choice of teaching content, to achieve the combination of basic and inspiring expansion. For the teaching content, on the one hand is the teacher to impart knowledge to the students of the carrier; on the other hand is also the student knowledge construction, cognitive development object. In the information society, the urgent need to cultivate innovative talents, talent innovation ability is good cognition; teaching content should not only make the foundation to be reflected, at the same time to the cultivation of creative ability of students is reflected. Real life and students with teaching content closely related to the students' learning enthusiasm greatly excited, at the same time, for learners, forms the basic content of the great attraction based on. Make full use of the opening of the network, through the formal teaching content, to provide a variety of information to students, the students desire for knowledge are met, and speaking to students' all-round development has very important significance. Therefore, in the teaching process to achieve the combination of the above content, so that students desire to learn to mobilize. Second, through the mode of independent choice of teaching content. For knowledge, there is a tight. Therefore, the process
of people's cognition is actually a process from simple to complex. As for the network course, the object of the course presents a plurality of features, and because of the difference of individual cognition, there is an association in the process of cognition. Therefore, the teaching content organization should realize the combination of gradual and organizational choice. Psychological experts pointed out through the study, the experts can quickly grasp the knowledge, and this is because the expert's knowledge structure is very good. When the learning content presented to learners, to construct knowledge structure should be given adequate attention, research shows that for the learners, clear knowledge structure will have a great role in promoting.

3.3. System scheme design

Based on the Internet application system for network teaching, so all the functions of the system are based on the user's browser and application server interaction. The database server of the system organizes and maintains the data related to the system. Internet network connection with server based on students, teachers and administrators to initiate a request to the server by using the user initiated request based on the application server to the database server data using the browser service feedback results to users at the same time. Through the online Q & A module, teachers and students, students and students, as well as the exchange of teachers and teachers after class to provide students with after-school questions to answer. Students in the BBS module to the teacher questions, the teacher based on the answer to the question; online Q & A to achieve the teachers and students, students and students, as well as the teacher's instant communication. The suggestion of physical exercise is a physical exercise for students. The design of physical education network aided system database is based on the application of the given environment, to establish the optimal database model, so as to construct the database application system, realize the effective storage of data, and different application requirements of different users to meet. Physical education network auxiliary system using SQL Server2000 database management information system to achieve the teacher information, student information, course learning, student achievement, student comprehensive evaluation of data storage and records. According to the actual situation of the campus network, considering the user for the sports teaching network aided system specific functions, user computer operating level, the design of physical education network aided system database management information system based on Web, and with the application server / database server / browser multi structure system combined with the construction of data storage model. Figure 7 shows the schematic diagram of the data storage model of PE teaching network assistant system. Users use the browser on the client to operate the system, at the same time; the system administrator does not have to be installed on each computer and system maintenance, no doubt easy to use. The system administrator can only meet the requirements of the application and the database server [11].

The hardware configuration of the computer determines the development of the program, the configuration is high, and the program development time is short. The size of the computer's memory, the speed of CPU and the size of the computer's hard disk are the hardware parameters that affect the efficiency of the program development. Typically, CPU development program, Intel Pentium, H-class450MHZ 600MHZ, if the above will be better; when the computer operating system is Windows 2000 Professional, the minimum memory requirement for computer 96MB, and install Windows 2000 Server operating system, the computer memory is the lowest demand increased to 192MB; when the computer operating system is Windows Server 2003 or Windows XP Professional, the computer memory is not less than 160MB; the computer system drives the required disk space 900MB, driver installation 3.3GB hard disk space occupied by the follow-up, MSDN Library document for the optional content, additional temporary 1.9GB evaluation system of space, the color of the display is set to 256 fold, the screen resolution should be more than 1024 * 768; the driver system requirements, CD version of CD- ROM drive or DVD-ROM drive; DVD version requires DVDRAM drive. Database access by ADO technology. ADO technology that is Active X date objects. ADO technology is the establishment of database access in Active X component. Through the ADO to achieve ASP access to the database, with simple and easy to understand, powerful and other advantages. ADO powerful can help users connect any compatible ODBC database, as well as support users to create full-featured database
applications, while supporting web developers to access database data. Program developers in the preparation of the application process can be achieved by the application of Internet ADO on various data resources to access. ADO statement to run in the script, while the realization of the combination of ASP. In other words, the database access mode is not available on the client browser, so it has been widely promoted and applied. In the process of system development, it usually makes use of the class to organize the event or function, which makes the code reuse rate increase, and makes the code management more convenient. Therefore, the new public class is used to manage the operation of the database in the sports teaching network assistant system. In the preparation of the project at the specified time, the user can directly in the ASP App_Code folder. Dedicated to the public class, including the global code is stored in the NET2.0 App_Code folder. In order to perform database operations and binding operations to perform the results, you need to create a new Sql Operate.

![Schematic diagram of data storage model of physical education network assistant system.](image)

**Figure 7.** Schematic diagram of data storage model of physical education network assistant system.

### 4. System design and Implementation

Open the browser, enter the system interface, the system cannot be accessed directly, the need for user login and access system. Click the "user login" menu button in the interface, the system will jump into the login screen, enter the user name and password to verify the login. The user to enter a user name and password, then click "login" button, when the system is verified correctly, the user can enter the management interface of the system; when the system validation error, then the system will prompt the user error or wrong password, to remind users to input. If the user is a new user, then the use of the system, we must first register, open the login screen, through the registration button, according to the prompt of the page to operate, you can achieve the registration of new users. In the registration information, to verify documents, including student ID card, staff card type, select the appropriate type, then the system will be based on the type of distribution of documents, account registration authority. For example, if the user selects in the registration certificate for the type of student card, then the system will give the user query permissions when the user login, query permissions; if the registration certificate type staff work permit is compared, and the students permission system gives teacher achievement entry permission; when login identity is the administrator, then the system gives the management authority. When the user logs on to the system successfully, it will activate the main interface of the PE teaching network assistant system. The function of the system is in the state that can be used, at the same time; the information of the system is classified and displayed in the interface. For example, when choosing a school situation, there will be school leaders, school, teachers and other options, if you click on the situation of teachers, will can clear the query to the appropriate faculty, and when you click on the teacher's name, there will be a detailed information of the teachers; the emphasis is on the faculties and the overall development of college are introduced; notice is only academic notice of school activities notice, notification service, logistics notice all notices are issued. At this point, the user login menu is dynamic, the other menu is static. Based on the characteristics of physical education curriculum, physical education curriculum is undoubtedly based on certain theoretical guidance for the practice of some technical movements. Therefore, the curriculum management mainly divided into two parts of theory and practice. In the theoretical course work module based on the syllabus of physical education,
sports teaching plan and teaching plan for the sports learning every day of physical education in the knowledge and skill essentials to view, and then the technical movement has played a guiding purpose[12]. The practice operation module, the main feature of sports curriculum is practical, so the requirements of the physical education curriculum every action techniques to master, based on this, in the practice operation module, each section can be the sports technical work of knowledge to be based on specific provisions for the times exercises and requirements, so that the students can master. Based on the above analysis, it can be seen that the management of the course work module is divided into the theory and practice. In the development process of the network system of physical education teaching, the module is designed as an open module. Learners in the process of using only the URL of the system in the browser address bar input can be directly into the curriculum management module. The two sub modules of the course work module change with the change of the teaching plan and the change of the teaching plan. Therefore, in the design process and teaching resources in the teaching planning module and teaching plan management module. The electronic resources used in the teaching process can be found in the teaching plan module and the teaching plan module. The system administrator can modify the resources, including add and delete, while ordinary users can access resources, namely online teaching resources, or will have to download the local computer after browsing, to edit the data. System administrators can manage the teaching. Through the database for teachers to increase, modify and delete operations. At the same time, the confirmation module is added based on the user confirmation mechanism. To maintain the maintenance of data integrity. In the system of the registration process, including the required user name, password, in order to facilitate the user to forget the password, find the password, set the password question and answer and consistent when prompted to register, you can retrieve the password; personal Email, individual types of users, such as students, teachers and other experts. When the information is complete, you can register. The teaching resource module includes five sub modules as shown below. This module is characterized by open, students can enter the module to obtain the appropriate resources, and students want to enter the module, the main system of the URL into the browser's address bar. Therefore, the response speed of the request of the module is higher, but also the focus of the development of this module, simple page settings is the style of the module, so that students can operate more convenient, fast. In the system navigation bar, through the link to each sub module and other modules. This structure is the structure of each sub module. Through the following two ways: the first way can get the results can be constructed using the framework, through a custom frame, which parts of the actual needs, the part is inserted in the framework; second ways form, calling the ASP statement to achieve the function of each part of the. The second way is in the construction of the system when used in this way, the consistency of the system will be improved, with the best overall effect, the system login interface schematic as shown in Figure 8.

![System Login Interface](image)

Figure 8. Schematic diagram of system login interface.

5. Summary and Prospect
Physical education is one of the compulsory courses in Colleges and universities. As for physical education, it is necessary to combine theory with practice. The network teaching of PE teaching time constraints and space constraints are solved, satisfies the interactive teaching process of teachers and students in the requirements, and promote the development of physical education, therefore, application
in sports teaching network technology has great role in the sports teaching. However, as the practice of physical education teaching activities, which cannot be divorced from the traditional sports teaching mode, therefore, for the network teaching, is a useful complement to traditional teaching, but cannot replace the traditional sports teaching. Through the research of this paper, it is very important to study the auxiliary function of the PE teaching network system design.

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