Design of Computer-Aided Volleyball Teaching System in Colleges and Universities

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Abstract. The emergence and gradual popularization of computers gradually raise the impact of information on the whole society to an absolutely important position. With the further development of the new round of curriculum reform, the application of computer technology in education and teaching is becoming more and more extensive, which enriches the teaching means. By introducing multimedia technology into the teaching work, we can realize teaching based on picture and text, express teaching information through picture and text, sound, video and so on, and greatly improve the teaching efficiency. Volleyball teaching is one of the main courses in ball games teaching. The application of computer-aided teaching means to volleyball teaching can achieve a great degree of auxiliary effect. In view of the classroom teaching in colleges and universities, computer aided teaching is widely used in the practice of classroom teaching, and the teaching methods and teaching models have been diversified. From the content of volleyball teaching and the design characteristics based on teaching system, combined with the idea of software engineering, this paper makes a detailed demand analysis to guide students to open autonomous learning, which is also the trend of educational development in the future[1].

Keywords: Computer, Colleges and Universities, Volleyball.

1. Introduction

Volleyball teaching is one of the main courses in ball games teaching. Computer-aided teaching is applied to volleyball teaching, so that students can have an intuitive understanding of complex abstract concepts. Computer-aided teaching system combines network technology, multimedia technology, information technology, is a new and advanced teaching concept[2]. In particular, the application of multimedia technology can digitize teaching resources and content, spread through computer network media, realize maximum sharing of teaching resources, enrich teaching content, help improve students' autonomous learning ability, and at the same time, improve teaching quality. Computer-aided teaching is a kind of teaching activity carried out under computer-aided, which discusses the teaching content, arranges the teaching process, and carries on the teaching training method and technology with the students in the way of dialogue[3]. CAI provide a good personal learning environment for students. The development of information technology accelerates the development process of educational informatization and modernization, and educational informatization is a trend of educational
development in the future. Educational informatization breaks the deadlock of traditional teaching mode, attaches importance to the combination of teacher teaching and student interaction, displays teaching resources in multimedia form, and implements teaching process, which is helpful to cultivate students' autonomous learning ability. In multimedia teaching, volleyball techniques and tactics can be fully demonstrated to enable students to see the movement technology completely. At the same time, the movement technology at a certain stage can be explained to students at any time, can be combined with audio and video, and solve the inconvenience of limbs. Digital technology plays a role in modern education, which not only improves the quality of students, but also summarizes new ways to solve problems. The combination of digital technology and physical volleyball course also slowly promotes the progress of volleyball teaching. As the basis of volleyball education, digital technology plays an important role in modern education in the network. Digital technology and multimedia technology are gradually widely used in modern education, which can give play to the advantages of digital technology. Digital auxiliary teaching system will solve the limitation of time and space of volleyball teaching. It is possible to teach anytime and anywhere[4].

2. Demand analysis of digital auxiliary system of volleyball basic technology

2.1. Teaching content of basic volleyball technique

Internet technology is to listen to a set of professional teaching management system to carry out, it can help training institutions teachers and students to conduct one-to-one, one-to-many video teaching, but also online interactive exchanges to answer questions and after-school tutoring, assignment, examination and testing, and so on. Volleyball basic education system is a three-dimensional virtual simulation system based on digital technology. It has a good human-computer interaction experience. Teachers, students and volleyball practitioners can use the system to learn to meet the needs of education and training enthusiasts. It can run on different operating systems[5]. Design and manufacture more reasonable products, complete a complete R & D process, and study functional and non-functional requirements. Domestic ball game field statistics software mostly use visual development language such as VB, VF, developers are mostly non-computer professional sports workers, they compare the characteristics of ball skills and tactics, can understand the actual needs of coaches, competition organizers, can follow the format of ball game statistics, work practices and computer level of software users, to achieve field statistics input, editing, query, printing and other functions. Compared with foreign countries, the software developed in China has a big gap in function. In the course of the lecture, the teacher can display all kinds of teaching diagrams, examples explanation, induction review and some relevant knowledge which can help students understand the textbook through the computer, thus reducing the teacher's blackboard writing time, so that the teacher can spare more time to answer the questions raised by the students in the course of study.

Figure1. Chart identification of computer-aided reference lines
2.2. Analysis of volleyball teaching design

Individualized teaching, that is, teaching students according to their aptitude, is a major advantage of the teaching system[6]. The so-called individualized teaching mode refers to the teaching mode which gives the corresponding learning strategy, learning progress and learning content according to the difference of the object's own intelligence, learning progress and the degree of mastering the knowledge points in the learning process. It is an important application of constructivism learning theory. Volleyball teaching design is the planning work of volleyball teaching. Teachers need to analyze all factors in the teaching process scientifically and comprehensively from the goal of volleyball teaching and the way to achieve the goal. Make reasonable teaching strategy, choose appropriate teaching method and teaching means, etc. The information management of teaching resources, information and teaching is carried out, the teaching mode is standardized, the teaching content is enriched and perfected, and a network-based auxiliary teaching platform is provided for the teaching course. The application of auxiliary teaching system can avoid all kinds of shortcomings of traditional classroom teaching, optimize teaching mode, improve students' autonomous learning ability, and take improving teaching quality and harmonious teaching atmosphere as the ultimate goal. Auxiliary teaching system is the auxiliary management platform of modern teaching. Therefore, the scientific volleyball teaching design is the premise to improve the quality of volleyball teaching, and the analysis of the needs of the teaching design is the key. Modern information technology has the content of digital teaching resources, so in the design of volleyball learning content, we must take into account the problem of screening and choice. In the modern information technology environment, learning content is like a boundless, deep sea. Learners are like a submarine in the sea. The same is true of our study. If we do not have a certain depth and breadth of learning content, our cognitive load will be increased and we will not be able to process effective knowledge, thus losing our way in the ocean of knowledge. Therefore, in the design of sports learning content, there must be a certain range of restrictions, conducive to the extraction and application of learning.

| field name | data type | Field size |
|------------|-----------|------------|
| ID         | Automatic numbering | long       |
| type       | data      | long       |
| name       | text      | 50         |
| txt        | remark    | no limit   |

3. Design of digital system for volleyball basic teaching

3.1. Project objective

The teaching of volleyball course is realized in the network environment, which creates the conditions for the asynchronous interaction between teachers and students, so that students can understand the mastery of theoretical knowledge in time with the help of the self-test platform provided by the system, and can participate in the course process in time. The application of multimedia technology can digitize teaching resources and content, spread through computer network media, realize maximum sharing of teaching resources, enrich teaching content, help to improve students' autonomous learning ability, and improve teaching quality. It is a new motive force for the development of education in the future.
3.2. System structure design
VB is used as programming language in this system. It is a visual programming language, which is based on object and develops the application program. A program entity is the combination of various objects, and the execution of the program is the process of message delivery and scheduling between various objects, so the design of the program is simplified. The system contains relatively low functionality according to the technical requirements of the project. Interface programming, its requirements do not exceed the existing development of technical content. The material section can be obtained from the network. The database programming adopts the B/S structure based on the WEB. Based on one or more image network sending hosts as the core equipment, the image signals of each monitoring subsystem are sent to each control point through the computer information network by connecting the Cajun series switches to the computer information network of the college. Client is mainly used for input and result display. For the security of the database, it mainly adopts the hidden database path, refuses the network to download the database, and takes the MD5 encryption to some important information, which further guarantees the security of the information.

4. Conclusion
The programming language is recognized by the computer as binary and digital, and all kinds of physical quantities have to have a digital standard. It is more and more accurate in one second and can be applied to the design of computer aided volleyball teaching system in colleges and universities. Starting with big data analysis, the biggest advantage of physical education digital teaching lies in the analysis of data. The system analyzes the items of physical examination accurately with data, and shows the individual situation of students and the overall situation of the school. Help teachers to carry out scientific training, layered teaching and targeted services. Because the system has been debugged many times, the system runs smoothly and realizes the design. This concept of computer-aided college volleyball education will certainly promote the progress and development of college volleyball and bring many benefits.

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