

# Design and Implementation of College Sports Training Environment Teaching System Based on Artificial Intelligence

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**ABSTRACT.** *With the rapid development of information technology, artificial intelligence technology has been well developed and widely used in many fields. In today's society in the information age, it is very important to apply the latest computer technology to the field of college physical education, so as to make physical education teaching and training quantitative and scientific. Physical education has its own characteristics. The establishment of network-assisted instruction system can improve the work efficiency of physical education teachers and promote the development of physical education towards scientific, rational and humanized direction. Under the background of artificial intelligence era, the teaching system of colleges and universities is facing new development opportunities. Universities should apply intelligent means to the teaching system and develop an intelligent teaching system that meets the development requirements of the new era. This paper analyzes the needs of college physical education teaching system, designs the college physical education teaching system according to its needs, and puts forward the realization path of college physical education teaching system based on artificial intelligence.*

**KEYWORDS:** *Physical education, Artificial intelligence, teaching system.*

## 1. Introduction

With the continuous progress of society and the continuous improvement of the level of science and technology, the computer industry has also been developing rapidly. Using computers to realize modern management has become the choice of many industries, including the education industry [1]. Computer multimedia is to send text, image, sound and animation and other forms of expression, teaching network information resource system is the computer technology, multimedia technology, and can save, manage, process and transmit these multimedia information [2]. With the rapid development of information technology, artificial intelligence technology has been better developed and widely used in many fields. Under the background of

artificial intelligence era, the teaching system of colleges and universities is facing new development opportunities. Intelligent means should be applied to the teaching system of universities to develop an intelligent teaching system that meets the development requirements of the new era [3]. Although the ordinary university physical education teaching system is composed of people, equipment, goals and information, the leading role is people, so in the process of maintaining relative stability and dynamic change, the structure and function of the system can be adjusted and modified artificially [4]. Physical education teaching has its own characteristics. The establishment of network assisted teaching system can improve the work efficiency of physical education teachers and promote the development of physical education teaching in the direction of science, rationalization and humanization.

Traditional college physical education classroom teaching, it is difficult to arouse students' interest in sports, resulting in low activity participation rate, unable to play the effect of physical exercise [5]. In college physical education, it is very important for teachers and students to get the comprehensive information of video, image and sound more quickly. The construction of the university physical education teaching system has played a positive role in enriching the teaching content, improving the teaching quality and realizing the modernization of educational technology. I believe it will continuously improve the efficiency and quality of university physical education teaching and training [6]. The development of computer and network education promotes the further development of physical education. The higher test frequency of college physical education classroom leads to higher difficulty in physical education teaching and construction of physical education classroom, which is not conducive to the development of physical education classroom with the main purpose of improving students' physical quality, quality education and will education [7]. The application of network assisted instruction system can improve the existing teaching environment, improve students' learning efficiency, facilitate students' selective learning, and conform to the people-oriented teaching concept [8]. Based on the analysis of the requirements of college physical education teaching system, this paper puts forward the teaching path of college physical education system.

## **2. Demand analysis of college physical education teaching system**

The development of college physical education teaching system focuses on students, mainly through the students' physical performance and physical test results to measure the physical quality of students. One of the advantages of intelligent teaching system is that it can't feed back the teaching effect of teachers immediately. Real time tracking of students' learning dynamics, intelligent recommendation method is used in the evaluation process to provide students with personalized learning content. The system obtains a self-adaptive evaluation system according to the tracking, integration and analysis of data. The purpose of software research is to use physical education and information management to serve the health of students, and to comprehensively evaluate and manage the physical quality of students. Because PE teachers know more about the management of relevant sports rules and

courses than professional software researchers, they have incomparable advantages when using and managing the software [9]. With the rapid development of sports industry, China's sports strength is constantly enhanced, and people's investment in sports fitness and entertainment is also increasing. Traditional elective courses are generally introduced by department teachers, but in order to meet the interest needs of students and mobilize their learning enthusiasm, using the help of network assisted teaching system can better achieve the purpose of introducing the content and teachers to students, and deepen students' further understanding of the selected courses.

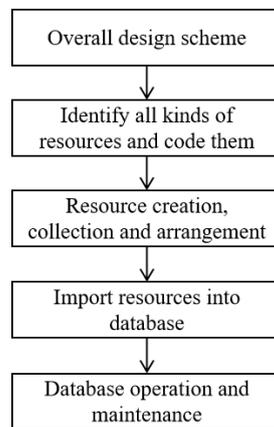
In order to transfer and process a large number of complex and disordered teaching information quickly and accurately in different places and times, managers must be familiar with the basic principles of information management system, and master the basic theories and methods of system science, management, operational research, etc. College physical education is the intersection of school physical education and social physical education. The degree of instilling college physical education ideas directly affects the social physical education situation of college students after they go to work, and affects the effect of lifelong physical education. With the increasing requirement of education environment for the quantification of teaching system, a large number of fuzzy and uncertain phenomena and facts in physical education teaching must be solved by scientific methods. Therefore, managers must use the mathematical method of fuzzy evaluation, that is, to give weight to the evaluation index, and transform the qualitative results into quantitative conclusions. This function of network assisted instruction system is of great benefit to improve students' learning quality, cultivate students' desire for knowledge, cultivate students' team spirit, and deepen the understanding between students. Generally speaking, the university physical education teaching system is to realize the low-cost and high-efficiency physical education teaching management, realize the modern technical management of physical education teaching, and ensure the safety and reliability of data while facilitating the operation of teachers and students.

### **3. Design of University intelligent teaching system**

The development of network promotes the progress of society, especially has a great influence on education. The popularity of online teaching and distance education has greatly improved the learning efficiency, which has greatly impacted the traditional education and is a great revolution in the education sector. The auxiliary teaching of artificial intelligence in college physical education classroom needs to carry out various teaching activities with the support of computers. Teachers can discuss classroom teaching projects together with students, and reasonably arrange the teaching process and the forms and techniques of sports. The network teaching assistant system can't completely replace the traditional physical education. The educational function of traditional teaching and the physical contact between teachers and students are beyond the reach of online teaching. Teachers can not only present text data to students, but also transmit audio and video to students, so as to

present the contents of teaching activities to students more completely, make up for the shortcomings of previous classroom teaching forms, effectively improve teaching quality and efficiency, shorten teaching time and achieve the best teaching effect [10]. Using the closed principle of administration and management, it is a basic way to establish a closed two-level teaching system for departments and offices. With the help of artificial intelligence technology, we can analyze the essentials of actions and demonstrate them step by step for many times, which not only helps to improve students' enthusiasm for participation, but also helps to cultivate students' subjective consciousness. In addition, the use of computer-assisted instruction in physical training can standardize students' movements.

College physical education teaching system is a small and medium-sized database software, which is characterized by abundant data resources and easy operation. The overall design idea and structure of the resource pool are shown in Figure 1.



*Figure 1 The overall design idea of the resource library*

In order to ensure the integrity and consistency of the organizational goals, in the process of building the target network, all the constructors involved in the target network must participate in the goal formulation. Only in this way can the goal be more in line with the actual needs, so as to arouse people's enthusiasm and creativity to a greater extent in the process of operation. By realizing man-machine interaction, the motion parameters can be adjusted, the dynamic motion effect can be implemented, the data can be recorded and fed back at all times, and the presented virtual simulation picture can reasonably simplify the complicated process such as human motion. In order to fully embody the thought of humanism and emotional management, and maximize the potential of human beings, the decision-making and implementation of major issues such as discipline construction, curriculum objectives and plans, income and distribution, etc. must be based on relevant laws and regulations, and the method of democracy before concentration should be implemented. As a physical education teacher, we should make full use of the current

information technology and search for micro-lesson resources by means of the network platform, so that students can know the contents to be learned in advance, and urge students to master the teaching courses in different degrees before formally carrying out teaching activities.

#### **4. Conclusions**

It can be seen as an extension of traditional classroom teaching, which brings great help to physical education teaching, is conducive to the cultivation of students' autonomous learning and creative ability, and is conducive to the realization of personalized teaching. In view of the teaching reform of college physical education, we must adhere to the learning link as the main platform of technology, effectively innovate the previous teaching mode, make the teaching methods more diversified, and strengthen the students' learning of sports knowledge as a whole. After the artificial intelligence teaching system is put into use, in the process of operation, it is necessary to carry out function test, system stability test, security test and so on for each module of the system. In order to ensure the integrity and consistency of the organization's goals, in the process of building the target network, it is necessary for all the builders who participate in the target network to participate in the goal setting work. With the continuous development of the education industry, in the future work, universities will have more teaching management requirements for sports, so the existing university sports teaching system also needs to be improved according to the specific needs of each school.

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