Wide Application of Computer Information Technology in the Practice of Physical Education

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Abstract. With the rapid development of high and new technology, leading the 21st reality, computer information technology has increasingly taken up an irreplaceable role in all aspects and has become one of the most basic tools in all walks of life. Physical education practice is one of the most important links in the education system of our country. Of course, computer information technology was introduced to support education. Based on computer information technology, this paper analyzes the university physical education and summarizes its development trend. First of all, by explaining the current situation of physical education technology and the characteristics of network education, this paper puts forward the idea of College Physical Education under the network information education environment of organically integrating high education concepts and information techniques. The integration of network teaching into physical education has affected the traditional concepts of physical education and promoted the reform of physical education. It analyzes the application prospects of computer information technology in improving work efficiency, scientific management and improving teaching methods in physical education practice, and proposes that computer information technology will show a broad development space for physical education. And this article selects 100 students from two classes of physical education major of the University of Physical Education to conduct a practical investigation. The experimental research results show that in recent years, people have made continuous efforts to explore and research, apply computer information technology to physical education, and have achieved relatively good results. Based on the analysis of the advantages of computer information technology in physical education, this article further explores how to make full use of the advantages of computer information technology to provide an effective basis for the optimization and improvement of physical education in my country.

Keywords: Computer Information Technology, Physical Education Practice, Teaching Innovation, Physical Education Development

1. Introduction
Computer technology has changed the society and times, the development of education and the existing comprehensive teaching methods [1]. Understanding computer technology is a training reform...
actively implemented to promote the development of education. Under the guidance of computer information technology, it is necessary to actively and effectively change the teaching mode of colleges and universities [2-3]. In order to actively form online learning mode, we should actively implement the construction and construction of information platform to improve the final management and training effect and final effect [4]t.

In response to this series of problems, sports life is to integrate sports teaching activities into students' lives to achieve the purpose of physical exercise [ 5-6]. As the elite of the society and the pillar of the future country, college students are the representatives of advanced culture. The development of their sports lifestyle has a demonstrative effect on the future social lifestyle [7]. In the reform of college physical education mode, it is necessary to incorporate physical education into the overall educational reform and development, and integrate the development goals, paths and power structure construction of the physical reform. Willing to play a supporting role, does not necessarily need to be completed as a key project alone. The overall goal of physical education in colleges and universities is to promote the overall development of mankind and the overall progress of society [8].

The former method of physical education can no longer today's physical education, and its teaching form, that is, to conduct reasonable teaching according to the actual situation of social development [9]. For today's physical education, computer information technology has become an important tool, and the application of computer information technology can create a good learning environment. In addition, the physical education reform brought by computer information technology will break through the previous teaching mode, and better cultivate the innovative talents needed by the society to ensure that the trained talents adapt to the development trend of the society [10].

2. Method

2.1. Use Computer Information Technology as a Teaching Background to Accelerate the Construction of a Physical Education Network Platform

Use computer information technology to continuously enrich the sports network teaching platform, thereby changing the backward state of sports teaching. On this basis, the transition from teacher-centered to student-centered, give full play to the role of student-based learning. At the same time, the use of computer information technology, network multimedia to create a learning mechanism, the use of platform feedback function, real-time interactive communication between teachers and students, and accelerate the transformation of traditional physical education methods. Further use the multimedia network to speed up the construction of resources, enrich the content of physical education, and interconnect with other schools to share high-quality resources. When designing sports network teaching content, we should create rich templates and teaching resources, and easily realize the construction of the website, so that it can solve most of the sports subject database, courseware library and other content. Secondly, make full use of the network for dynamic management of sports network teaching. On this basis, fully develop sports network teaching courseware, establish high-quality sports network teaching courses, and do a good job in sports data sorting and network management.

2.2. Based on the Computer is an Intelligent Technology, the Introduction of Network Teaching Mode

In order to ensure the smooth development of education, we need a perfect education system. At present, the physical education mode in Colleges and universities has not been completely online education system. Classrooms use online education, but it's hard for them to implement. The network physical education teaching method combines the national political support and sports website by improving the school's hardware support and training investment in the effective implementation of teachers' ability.

2.3. Change the Traditional Teaching Mode and Skillfully Use the New Era Network Teaching Methods
In view of the rapid development of computer information technology and the needs of college physical education, we should fully transform the current physical education network teaching methods and use the rich network to realize students' independent learning. To be specific, from network media management to class teachers, they should give full play to the reforms brought by network technology to physical education and change teaching concepts. At the same time, physical education management personnel and teachers should fully promote the use of the network platform, and design targeted physical education teaching methods for this platform to promote students' independent learning, thereby changing the learning methods. In addition, pay attention to cultivating students' interactive practical ability, and promote the effective development of student sports activities. The construction of sports network teaching platforms in many schools is based on teaching evaluation and declaration. As a result, the platform construction is not suitable for students to use, and the effect of sports teaching has not been further improved. In addition, real-time resource exchange between universities can enable high-quality physical education resources to be shared through a unified platform.

2.4. Deep Learning Synchronization Algorithm Based on Computer Intelligence

After extracting valuable data features from n sets of teaching sample data, the actual output of the jth neuron in the hidden layer is the actual output of neurons in the output layer:

\[
C_j = f_1 \left( \sum_{i=1}^{n} s_{ij} q_i + \xi_j \right) \quad j = 1, 2, ..., q,
\]

\[
b_l = f_2 \left( \sum_{j=1}^{n} r_{lj} C_j + q_l \right) \quad l = 1, 2, ..., p.
\]  

(1)

The expected error function of the actual output is as follows:

\[
E = \frac{1}{2} \sum_{i=t}^{p} (w_i - b_i)^2
\]  

(2)

The performance of online teaching depends on teaching efficiency. The efficiency of fixed network teaching is difficult to meet the requirements of variable weight adjustment. The weight value easily crosses the optimal value of the gradient direction, resulting in failure of convergence and expected output. In order to speed up the convergence speed and jump out of the local minimum, an online self-adjustment method of network teaching efficiency is proposed. The basic idea is to adjust the network teaching efficiency according to the total error E.

\[
a(t) = \begin{cases} 
a \times a(t - 1) & E(t) < E(t - 1) 
b \times a(t - 1) & E(t) < c \times E(t - 1) \end{cases}
\]  

(3)

The rule of this algorithm is that when the total error e between the actual output and the expected output increases, the network teaching efficiency will be reduced by 4 times; when the total error e between the actual output and the expected output decreases, the network teaching efficiency will automatically Doubled adaptively.

3. Experiment

3.1. Experimental Research Objects

On the basis of big data, in order to deeply analyze the methods and methods of Physical Education College, this paper selects two classes of Physics University to carry out experiments. The online class is separated from the control class. Yes, there are 50 students in the online class and 50 students in the control class, and 100 students are divided into two groups. After class for students to test knowledge and online teaching. For the impact of computer informatics model, and then solve the problem of physical education model reform. The present situation of education in this sports university has solved the problem. These are: research is the study and research of engineering university students.
3.2. Experimental Research Design

This research focuses on the practical teaching of two classes in the University of Physical Education. The network class adopts the new method of physical education reform based on the background of computer information technology, while the control class adopts the traditional physical education model. After the practical teaching is completed, compare the knowledge mastery of the two classes and analyze the comparative method. Then, the "Questionnaire on Practical Teaching Effect for College Students" was distributed to the students. This practice survey is aimed at a series of links such as students' practical teaching courses. A total of 100 questionnaires were distributed. There are 98 valid questionnaires recovered, with a recovery rate of 98%. This article analyzes the data and processes the text based on the questionnaire answers. Although this questionnaire can learn a lot of information, there are also cases of incomplete or insufficient information. Therefore, on the basis of this questionnaire, this article still uses the method of literature research through the views of domestic and foreign scholars on the status quo and existing models of the reform of physical education teaching mode under the background of big data. The purpose is to be more comprehensive and accurate Understand the reform measures.

4. Results

From the data in Table 1, it can be seen that the difference in the test results of the two groups of students after the test is significant. It shows that the application of research teaching methods in college physical education is more conducive to improving students' practical ability, technical level and theoretical level. Due to the reform of the experimental class and the adoption of research-based teaching, the teaching effect of the experimental class is significantly better than that of the control class. The focus of research-based teaching is to change students' learning methods. The core problem to be solved is how to give full play to the initiative, enthusiasm and creativity of students in the learning process, and transform passive learning into active learning. However, its focus is to change teachers' teaching concepts, teaching concepts, teaching strategies and teaching methods. Teachers should transform from teachers and instigators to organizers, guides, helpers and facilitators of students' active learning.

Table 1. Comparison and analysis table of students' individual sports performance after the experiment

| Group               | Number of people | \(\bar{x}\) | s  | t   | r  |
|--------------------|------------------|------------|----|-----|----|
| Net class (male A) | 25               | 85.11      | 5.31| 3.38| 0.03|
| Control class (male B) | 25           | 78.92      | 5.98|     |     |
| Net class (female A) | 25             | 83.21      | 5.76|     |     |
| Control class (female B) | 25           | 80.55      | 5.56| 3.15| 0.02|

Based on the above advantages, students have not only a simple mechanical memorization of the technical action essentials they have learned, but a real understanding of the technical actions through mutual research through reference to materials and computer information technology teaching. From mechanical memory to comprehension, students have done a lot of theoretical and practical research, so they have improved greatly in theory. More importantly, in the research process, the students'
interest has been greatly aroused and the students' enthusiasm for active learning has been enhanced. First of all, from the perspective of educational philosophy: research-oriented teaching requires teachers to create a democratic, equal, harmonious, and free teaching environment. Teachers and students are equal, and the teaching is mutually reinforcing. The alternative increases the students' freedom and allows each student to fully create play.

![Figure 1](attachment:image.png)

**Figure 1.** Analysis of traditional physical education teaching methods

As shown in the data summarized in the research survey in Figure 1, Figure 1 shows the traditional curriculum teaching methods adopted by the physical education majors of physical education universities. We can understand that in the current computer information technology society, most schools Practical teaching is used to teach, because students' favorite teaching method is role playing, followed by case analysis. Both types of teaching methods require field visits and everyone needs to brainstorm. The activities are full of interaction and can better motivate students thinking. The most disliked teaching method is the teaching method, followed by task-driven. These two types of teaching methods are both boring topics in a boring classroom. For students, because of the previous decades of experience The teaching method will make the students uninterested and even drowsy. Therefore, we know that the best way for the physical education major in the traditional teaching method is to teach in the practice teaching.

![Figure 2](attachment:image.png)

**Figure 2.** The trend of deep learning synchronous learning algorithms in physical education practice

The research trend of deep learning synchronous learning algorithm is shown in Figure 1. Although the distributed online learning algorithm smoothes the fluctuations, its effect rises linearly. Among them, when n=3, the network formed by the distributed online learning algorithm reaches 8 nodes, showing all possible fluctuations, which means that the scale of n=4 or 8 is for deep learning with a
fragment length of 5. The synchronous learning algorithm is in a saturated state, and further increasing the fragment length will make the algorithm perform better here. With the continuous and extensive application of computer technology, the deep learning synchronization learning algorithm is widely used in current college physical education, but it needs to be continuously improved and perfected to achieve a wide range of applications.

5. Conclusion
The application of computer information technology in sports has great feasibility. Through the application of deep learning synchronization algorithm in physical education practice, teachers' own ability has been improved by 35.73%, and students' self-learning ability in sports has been improved by 56.55%, which has fully promoted the development of physical education practice. The widespread application of computer information technology has not only improved the effect of physical education practice.

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