

# *Interest Cultivation Mode in College Physical Education Training Based on Big Data*

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**Abstract:** With the continuous development and application of big data, the current teaching model has undergone great changes, and the drawbacks of traditional teaching methods have gradually been exposed. In terms of physical education, teaching reform in the era of big data is imperative. In the era of big data, how to seize the opportunity and effectively use big data technology and computer information technology to carry out teaching is a question that every teaching worker must think about. The problem is that online teaching has a positive effect and influence on cultivating students' sports awareness and raising interest in classroom teaching. At the same time, in the context of big data, the widespread popularization of sports applications has brought huge opportunities to improve the effect of university network teaching, and discussed the factors and significance that affect the effect of university network teaching, so as to promote the innovative and differentiated development of university sports work. And comprehensively analyze the strategy of improving the effect of colleges and universities network teaching under the background of big data, and then promote the development of college physical education to effectively carry out college sports work, and continuously cultivate students' concept and ability of lifelong sports. To develop high-quality college students' physical education curriculum, it is necessary to identify the key directions of teaching reform and carry out work in a planned way. Combining the advantages of big data, in the process of physical education curriculum reform, combined with the collected data on the overall physical fitness of college students, feedback on the effects of teaching activities, and students' personal interest in physical exercise, etc., an intuitive analysis can be made through the comparison of comprehensive data: Whether the teaching work has achieved the expected teaching effect, whether the students' physical literacy and physical fitness have been improved, etc., and through the lack of teaching derived from the data, the bottleneck facing the physical education curriculum is analyzed. According to the needs of current teaching development, explore A scientific teaching method suitable for the individual needs of students and the direction of teaching reform. This article analyzes and discusses the reform measures of physical education in the era of big data, and learns from the analysis of experts to study the application of big data in the cultivation of college physical education and training interest.

## 1. Introduction

At present, the age of college students is mainly born after zero and born after zero. They are in the information age [1]. These students have a wide range of knowledge, pursue the expression of individuality, and dislike the teaching model based on textbooks and even solidified [2-3]. However, many teachers still use traditional teaching methods in their teaching methods [4]. One is to ignore the physical education theory class. The study hours of theory courses are significantly less than practical courses. Insufficient reserves of student sports knowledge. Teachers unilaterally output theoretical knowledge on the stage, without combining multimedia teaching aids to give students vivid case explanations and demonstrations [5]. Therefore, college students generally sleep and play with mobile phones in college physical education classes, and lack interest in learning. The second is to adopt a unified teaching method in practical classes, without considering individual differences of students. The set teaching objectives are difficult for some students with poor physical fitness to complete, and the content of the curriculum design lacks interaction and communication. Did not let students feel the value of physical exercise, resulting in students often just cope with teaching tasks, not willing to actively participate in physical exercise after class.

In order to improve the overall physical fitness of students, college physical education courses generally require all students to participate. But as far as the actual situation is concerned, many students rarely take part in physical exercises in their daily lives, and their decline in physical fitness has not been alleviated [6-7]. The main reason for these phenomena is that students have irregular work and rest, are addicted to the Internet, and rarely or do not participate in outdoor sports. Second, many students have not formed the correct physical learning psychology and reflected passive learning in physical education curriculum. National physical exercise is only to achieve the level required by the state, participating in the physical testing work required by the state, and lack of consciousness of long-term physical exercise [8-9].

The advent of the new era has promoted the development of teaching methods towards intelligence and information. The application of big data technology requires the comprehensive quality training of teachers including the improvement of professional technical literacy. From the perspective of actual teaching feedback, the main obstacles that hinder PE teachers' innovative education methods are the use of information technology means, and teachers lack the awareness of big data [10]. Therefore, teachers can be organized in batches to participate in professional teacher training in related directions, to help teachers combine technical means with innovative teaching concepts, learn to comprehensively analyze big data, and design more reasonable and interesting new classrooms for students.

## 2. Method

### 2.1. Explore the Application of Big Data in Sports Training in the Context of Big Data Combined with Expert Advice

#### 2.1.1. Coefficient of Variation

The coefficient of variation refers to the degree of coordination of experts, the smaller the coefficient of variation, the higher the degree of coordination. If the coefficient of variation is greater than 0.25, the degree of coordination is considered low. The calculation formula is:

$$V_j = \frac{S_j}{M_j} \quad (1)$$

$$M_j = \frac{1}{n} \sum_{i=1}^n X \quad (2)$$

$V_j$  represents the coefficient of variation,  $S_j$  represents the standard deviation, and  $M_j$  represents the arithmetic mean.

### 2.1.2. Kendall Harmony Coefficient

The Kendall harmony coefficient  $W$  value can test whether the experts' evaluation results of the indicators are consistent. The  $W$  value is between 0-1, the larger the value, the higher the consistency. The  $P$  value represents the significance test of the Kendall harmony coefficient:  $P > 0.05$ , the result is not consistent; on the contrary, it is consistent. The calculation formula is:

$$W = \frac{S}{\frac{1}{12}[K^2(N^3 - N) - K \sum_{i=1}^K T_i]} \quad (3)$$

$$T_i = \sum_{j=1}^{M_i} (N_{ij}^3 - N_{ij}) \quad (4)$$

$$X^2 = K(N - 1)W \quad (5)$$

$N$  represents the number of indicators evaluated,  $K$  represents the number of experts participating in the evaluation,  $S$  represents the sum of deviations between the sum  $R_i$  of each evaluated indicator and the average of all these sums, and  $T_i$  represents the correction coefficient.

## 2.2. Enriching Sports Network Teaching Resources and Content

In the development process of the big data era, enriching sports online teaching resources and content is conducive to achieving students' diversified learning goals, allowing students to improve learning efficiency and quality in the rich courseware resources and online Q&A activities. In the process of enriching sports network teaching resources and content, teachers can use big data technology to collect valuable sports teaching literature, course videos, and picture materials, and introduce sports teaching and competition videos to the network teaching platform to enrich the network sports the purpose of the course content. At the same time, in order to enhance the interactive nature of online sports activities, teachers can also divide online teaching into three links: teacher question and answer, classroom discussion, and evaluation. In the teacher's Q&A session, solve and give the learning problems raised by students. In class discussions, effective sports knowledge exchanges and discussions are conducted for valuable literature, course videos, and pictures. In the assessment and evaluation link, the use of big data technology to monitor the results of students' learning behavior and learning conditions, to evaluate the actual situation and ability of students' learning, and the usual online online exams account for 20% of the total score, which improves students' online learning pay attention to the degree, improve students' online learning effects through reasonable evaluation of students, and prevent students from having absent-minded learning psychology in the process of online learning.

## 2.3. Build a Complete Network Sports Teaching System

In the development of online sports teaching in colleges and universities, online sports warm-up training courses can be constructed, combined with teaching App and information technology under the background of big data, to rationally integrate relevant teaching content of students' online sports warm-up training. Secondly, in the process of improving the online physical education system, the

method of setting up fitness skills training courses can also be adopted. In the training of each project, students can learn online teaching videos according to their actual situation. Choose suitable training items and intensity items for practice. In the process of online fitness skills training for students, teachers can urge students to complete relevant personal training and strengthen the cultivation of students' good fitness habits and awareness. Finally, in the context of big data, teachers should reasonably dig out resources related to the teaching of students' physical education courses, and construct reasonable micro-video teaching courses. In the process of micro-video teaching, you can rely on the online teaching platform through teaching courseware and pictures. Strengthen students' knowledge and understanding of online sports courses.

#### **2.4. Play the Data Recording Function of Sports Software**

In order to effectively utilize the advantages and functions of big data technology, it is also necessary to fully integrate the data recording function of sports software, and reasonably record and analyze students' online learning situation. For example, in the process of online physical education in colleges and universities, you can share the sports software on the online market to the online teaching platform, and reasonably record teaching records, student learning process, teaching evaluation, etc., so as to make it clear that students exist problems and short coming in the learning process. When using the data recording function of sports software, you can also use big data analysis technology to reasonably analyze the real sports data of students, timely understand the training attitude of students in online classroom learning, attendance and assessment, and maximize the network of colleges and universities. The quality of physical education courses, through reasonable data analysis and evaluation, improve the individuality and pertinence of online physical education courses. In addition, the sports software under the background of big data can also comprehensively evaluate the knowledge standards of students' online learning, reasonably record the sports knowledge standards of students' online learning, and provide teachers with a reasonable understanding of the teaching situation and student training.

#### **2.5. Drawing on the Advantages of Big Data and Innovating Teaching Models**

At present, in order to solve the bottleneck faced by the regional curriculum reform in colleges and universities, college teachers should combine the advantages of the era of big data, innovate the teaching model of physical education curriculum, and pay attention to the cultivation of students' sports literacy. Flipped classrooms, MOOCs, and micro-classes are now an extension of traditional physical education classrooms, breaking the limitations of traditional classroom time and space, allowing students to freely arrange learning time and venues, allowing students to become the main body of the classroom and master the autonomy of learning. Flipped classroom watch teaching videos before class, practice in class, after class, teachers combine the content of big data feedback to give students one-on-one tutoring; MOOC uses online teaching methods to expand students' knowledge and deepen their understanding of subject knowledge; Micro-class courses are short in time and focused, in-depth explanation of knowledge points for students. On the whole, these three teaching modes are all based on the network, through the collection and analysis of big data information, starting from the interests and learning needs of students, the teaching content is designed to be vivid and vivid, and the teaching focus is split. The form is convenient for students to observe key knowledge repeatedly and is more targeted.

### 3. Experiment

#### 3.1. Research Objects

This article is based on "Experimental Research on the Application of Big Data Exploratory Teaching in the Teaching of Sports Expansion Training". Select 100 students from the 2017 outreach training physical education option class of a college as experimental subjects and randomly divide them into experimental class and control class, with 50 students in each class for experimental research. Among them, there are 36 boys and 14 girls in the experimental class and 30 boys and girls in the control class. 20 people. Class 2017 is a newly enrolled student. Through the preliminary questionnaire survey, most of the students have not been exposed to outreach training before. A very small number of students have participated in the outreach training project but the time is short. The experimental and control classes in this experiment are randomly selected. Therefore, there should be no difference between the two classes in terms of the basic skills of outreach training. In terms of physical fitness, there is no significant difference in the various test indicators conducted before the experiment ( $P>0.05$ ).

#### 3.2. Questionnaire Survey Method

This experimental questionnaire adopts the survey method of in-person distribution and recovery in class. Before the experimental test, the experimental class and the control class had a total of 100 students. Before the experimental test, a total of 100 questionnaires were distributed, 100 questionnaires were returned, and the recovery rate reached 100%. Among them, there were 100 valid questionnaires, and the efficiency reached 100%. After the experiment, a second questionnaire survey was conducted. 100 questionnaires were distributed and 100 questionnaires were returned. The recovery rate reached 100%. All valid questionnaires were 100, and the effective rate was 100%. Before the questionnaire was distributed, some experts and professors were consulted to review the validity and accuracy of the questionnaire. They believed that the questionnaire could accurately reflect and represent the purpose of the investigator and had high validity.

#### 3.3. Teaching Experiment Method

According to the inquiry teaching theory under the background of big data, the inquiry teaching mode is adopted in the experimental class and the traditional teaching mode in the control class.

#### 3.4. Experimental Guarantee

In order to ensure the reliability and validity of the experiment, we take the following safeguards for the experiment. ) Experimental class and control class: Before the experiment, test the basic physical fitness of the subjects and test the test data. Compared with the control class, the test results showed no significant difference ( $p>0.05$ ). The teaching of the experimental class is provided by other outreach training teachers

### 4. Result

#### 4.1. Comparative Analysis of the Height and Weight of the Subjects before the Experiment

Before the start of the experiment, test and analyze the basic conditions of the experimental

students' height and weight. The results after the analysis are shown in the table:

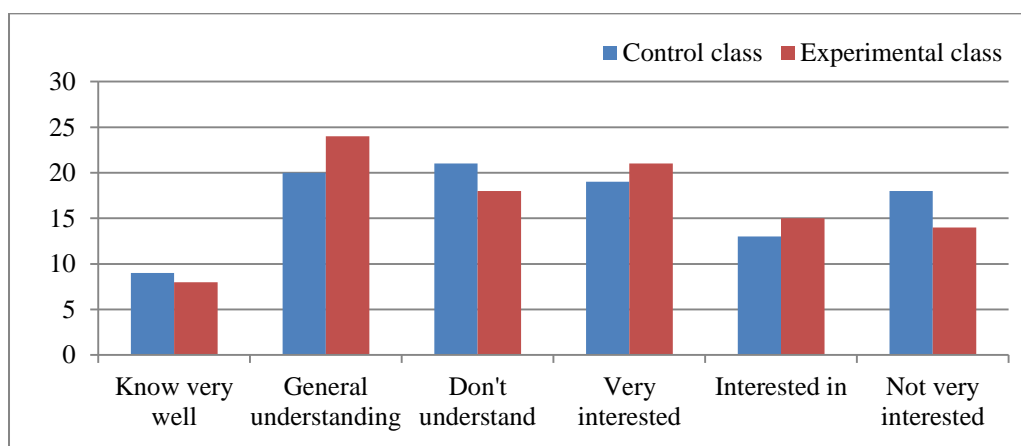
*Table 1. Height and weight analysis table before the experiment*

	Average height(m)	Average weight(kg)
Control class	1.71	64
Experimental class	1.72	66
t	1.721	1.643
Value P	0.234	0.124

Note:  $P > 0.05$ , no significant difference,  $P < 0.01$ , the difference is very significant,  $P < 0.05$ , there is a significant difference.

The analysis of the basic situation of the experimental subjects before the experiment can be seen from Table 4.1. The average height and weight of the control class are 1.71 and 64, and the average height and weight of the experimental class are 1.72 and 66. The experimental class and the control class perform independent sample t test. Weight t value is 1.643, p value is 0.124, p value is greater than 0.05, height t value is 1.721, p value is 0.234, height and weight p value are both greater than 0.05. It shows that there is no significant difference in the height and weight of the two groups of students. It can be explained that the basic physical conditions of the students in the experimental class and the control class are basically the same, which shows that the experiment has been compared with each other and has high internal validity, and can be tested.

#### 4.2. A Comparative Analysis of Experimental Subjects' Cognition of Outreach Training Before the Experiment



*Figure 1. Analysis of the subject's cognition of outreach training before the experiment*

The data shows that there is no significant difference between the experimental class and the control class in the students' cognition of the expansion training. The performance of the two groups of students' interest in the expansion training reflects that their cognition of the expansion training is at the same level, which can ensure the teaching experiment feasibility.

#### 4.3. The Physical Training of Each Group of Experimental Subjects before and after the Test

Participating in extracurricular sports activities is the best practice method for the extension of the content of physical education. Frequent participation in extracurricular sports can enhance students' physical fitness and improve sports skills. It is of great help to consolidate and improve the sports

knowledge and skills taught in physical education. We will analyze the situation of the two groups of students participating in extracurricular physical exercises after the experiment.

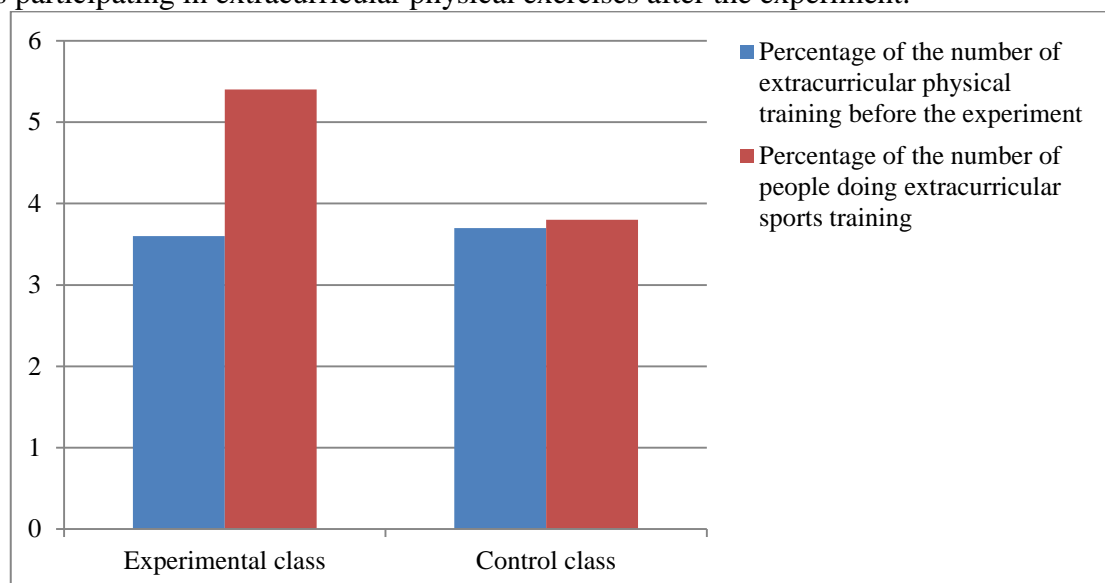


Figure 2. The percentage of extracurricular sports training in the experimental group before and after the experiment

It can be seen from the figure that extended teaching in the context of big data is easier to stimulate students' interest in physical education training than traditional teaching, and is beneficial to improve students' physical performance.

## 5. Conclusion

Under the background of big data, the improvement of the effect of online sports teaching in colleges and universities requires the construction of a complete online sports teaching system, actively combining the advantages and characteristics of big data, rationally developing student online sports teaching activities and courses, and giving full play to the rich and professional content of online teaching features of high degree and novel structure. In the era of big data, the reform of physical education is also imminent. Teachers must innovate teaching concepts, actively strengthen the reform of teaching methods in the teaching process, and use big data technology and new media technology to improve the quality of physical education. With the popularization of big data in college education and teaching, physical education as a practical subject in school education and teaching has ushered in an epoch-making change. Applying the information collection function of big data to the practice of physical education and using conventional physical classroom teaching methods commonly used in colleges and universities is a means to guide students to learn. Based on the junior high school sports in the era of big data, physical education teachers must keep pace with the times, integrate big data technology on the basis of traditional sports, optimize and innovate junior high school sports teaching methods, make its advantages complement each other, fully stimulate students' interest in sports learning, and improve students' sports awareness, lay a good foundation for their comprehensive and healthy development and further promote the sustainable development of junior high school sports in our country.

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## Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

## Conflict of Interest

The author states that this article has no conflict of interest.

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