

# Reform and Development of Physical Education Teaching in Higher Vocational Education under the Background of Big Data Era

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**Abstract:** Owing to the progress of the times and the innovation, it has become an inevitable trend to introduce big data technology into education and teaching. However, at this stage, the application effect of big data technology in higher vocational sports teaching is not obvious enough. Only by strengthening teaching reform and promoting teaching progress, can we better enhance the effectiveness of physical education teaching. Therefore, this paper makes a specific analysis of the reform direction and progress strategy of physical education under the background of big data.

## 1. Introduction

Physical education has not been focused on enough in China's education system, especially under the influence of traditional teaching models, it can no longer meet the current trend of deepening reform in the field of education. Therefore, higher vocational colleges should fully use the advantages and values of big data technology, change the teaching philosophy and methods, and comprehensively enhance the efficiency of teaching.

## 2. Reform Direction of Higher Vocational Sports Teaching under the Background of Big Data

### 2.1 Reform of Teaching Mode

Under the background of big data, teaching mode is the main reform direction of higher vocational sports teaching. Due to the popularization and promotion of network information technology, mobile devices, computer terminals, etc. have become crucial tools and ways for students to study on their own. In this environment, physical education teachers can form a sports information teaching mode by carrying out independent learning mode, group cooperative learning mode, etc.<sup>[1]</sup>. For example, when learning volleyball service skills, teachers can make students watch volleyball videos before class, and students can record individual learning imitation actions into videos and send to the learning platform. In this way, PE teachers can master the preview of students and enhance the pertinence in actual teaching activities. Teachers can also use information technology to analyze students' actions after guidance and during preview, and then push students to develop special training according to their own shortcomings to enhance the effect of teaching.

### 2.2 Reform of Teaching Methods

In the context of the big data era, education and teaching in schools are beginning to develop in the direction of informatization, and due to the convenience of informatization technology, it is greatly crucial for the reform of teaching methods<sup>[2]</sup>. The reform of physical education teaching methods can not be separated from big data technology, which can be applied to improve the construction of education software and hardware, enhance the interest of physical education teaching, enrich teaching resources, inspire students' learning interest and enthusiasm to the maximum degree, and thus enhance the efficiency of teaching. For instance, teachers can break the traditional teaching method of simplification through big data technology, and transform the explanation of theoretical knowledge into video teaching, electronic courseware teaching, etc. This can not only attract students' attention, but also facilitate students' repetitive learning and

recognition, thus enhancing students' sports skills.

### **2.3 Reform of Teaching Evaluation**

Teaching evaluation mainly refers to making specific teaching comments on students' learning in a period of time, so that students can recognize their own shortcomings and enhance the teaching pertinence. During PE teaching evaluation, the model of taking achievements as the main body of evaluation is no longer applicable. In big data era, higher vocational sports teaching evaluation has a new progress direction. Physical education teachers can use multimedia technology to make specific evaluation on the informatization teaching<sup>[3]</sup>. For example, teachers can use VR technology to detect students' heart rate, center of gravity movement, etc. in real time during sports, so as to enhance the accuracy and scientificity of evaluation. Meanwhile, teachers can also adopt the intelligent badminton row to analyze the students' swing strength, direction, speed, etc. or collect and compare data from multiple students, thus forming more objective teaching evaluation results.

### **3. Difficulties in the Reform and Progress of Physical Education**

Under the background of big data era, physical education teaching has ushered in new progress opportunities and challenges. Higher vocational colleges should seize the opportunities, reform education forms, teaching objectives, education systems, etc., and foster students' practical innovation recognition and ability. However, in the actual process of reform, we have encountered various obstacles and difficulties.

First of all, the fundamental theoretical knowledge and sports professional skills are two important components of teaching activities, and the actual reform should be carried out according to the problems revealed in teaching. Secondly, the physical education teaching content is too rigid and single, lacking theoretical innovation, which leads to many students being unable to systematically learn and master professional theoretical knowledge<sup>[4]</sup>. Finally, due to the lack of construction funds in some colleges, many sports teaching equipment is not perfect, which affects the smooth progress of sports teaching activities. Faced with this problem, colleges should actively test teaching equipment, eliminate old equipment, and give new technical equipment for the progress of students.

### **4. Development Strategies of Higher Vocational Sports Teaching under the Background of Big Data**

#### **4.1 Improving the Software and Hardware Facilities of Physical Education Teaching**

Network technology is a crucial auxiliary tool to push the sustainable progress of modern social economy, which mainly includes network software and network hardware. Therefore, in the context of big data, to promote the development of physical education, it is crucial to improve the software and hardware facilities for physical education. As the leader of teaching activities, physical education teachers should apply for education funds as much as possible, purchase corresponding network hardware facilities for physical education teaching, and especially actively introduce educational software with higher technical content. On this basis, the effective sharing of educational resources among colleges can be formed. In addition, colleges should also actively develop the research and development of educational software and hardware to provide students with high-quality teaching resources and platforms to the maximum extent<sup>[5]</sup>. Meanwhile, teachers are the leaders of teaching, so colleges are supposed to focus on the cultivation and promotion of teachers' informatization ability, promote teachers to master network software and hardware, and ensure the progress of physical education teaching. Colleges can guide teachers to develop information sports teaching demonstration classes and strengthen teaching professionalism.

#### **4.2 Cultivate Students' Information Literacy**

In order to push the progress of physical education, we should also cultivate students' information literacy. Only when students have certain information literacy can they deepen their

recognition and grasp the information sports teaching content, and have certain sports information learning ability. First of all, colleges should always adhere to the principle of student orientation, put the comprehensive progress of students at the key position of education, and constantly create conditions conducive to the progress of information sports teaching<sup>[6]</sup>. For example, vocational colleges can set up elective courses of information technology courses, so that students can form good information literacy in sports information teaching. Secondly, teachers are supposed to encourage students to think and learn independently, so that students can accept the new physical education teaching model, and are no longer bound by the traditional teaching model and learning thinking. In addition, teachers should also strengthen interaction with students, and work together to push the smooth progress of sports information teaching. Specifically, colleges should focus on the cultivation of students' information literacy, teach students more information operation skills and theoretical knowledge, and help students deeply master the information teaching tools learned.

### **4.3 Follow the Goal of Sports Information Teaching**

Whether it is a vocational college or an ordinary undergraduate school, its important teaching aim is to impart knowledge to students, so that students can internalize knowledge into their own practical skills after learning, and apply it to their future work, so as to better serve the society. Therefore, higher vocational sports teaching should follow the goal of information teaching, apply information technology to sports teaching activities, and push the fundamental reform and progress of sports teaching. However, the introduction of information technology in physical education should be appropriate, and methods conducive to improving the effectiveness of physical education can be used selectively. This can not only enrich the teaching content, innovate the teaching form, strengthen the students' physique, but also help students accurately master the essentials of sports actions through information technology, thus promoting students to develop standardized physical exercise behavior<sup>[7]</sup>. Therefore, in the process of reform and progress, higher vocational education should fully understand and master students' learning ability, learning needs, physical quality, hobbies, etc., and then use big data technology to develop targeted online courseware to enhance the effectiveness of teaching.

### **4.4 Do Good Jobs in Training Physical Education Teachers**

The training of teachers can be divided into two parts: educational ideology and educational ability. Therefore, to better adapt to the progress needs of physical education in the context of the big data era, teachers should transform their own education concepts and get the organic combination of big data technology and physical education teaching. Colleges should constantly strengthen the publicity and promotion of big data technology, and further deepen the PE teachers' understanding and attention to big data technology. In addition, colleges can also actively and independently develop big data technology learning and training activities, constantly improve teachers' information technology application ability, and conduct education and training for professional knowledge of sports teachers by type and level. Colleges should also thoroughly implement the principle of elite training for backbone, strengthen targeted education and training for excellent physical education teachers, select high-quality physical education teachers as key training objects, and improve the team construction of teachers. Colleges should also provide teachers with learning environment and technical equipment, so as to push the information progress of physical education.

## **5. Conclusion**

To sum up, in the era of big data, the traditional sports teaching model can no longer meet the progress needs of the education field. It needs to be effectively improved to achieve sports teaching reform. Through improving teaching facilities and teaching level, we will promote the sustainable progress of teaching. However, the lack of data support during physical education reform leads to a certain degree of randomness. Therefore, colleges should strengthen the application of big data technology, improve the pertinence of teaching reform, and then promote the progress of higher

vocational sports teaching in China.

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