

# Thinking on innovative teaching of higher vocational sports in the era of big data

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**Abstract:** The era of big data provides unprecedented opportunities and challenges for the innovative teaching of higher vocational sports. With the rapid development of information technology, big data technology has gradually become an important support for innovative teaching of higher vocational sports. In this constantly evolving era, higher vocational physical education needs to adapt to the changes of The Times, and actively explore a variety of new teaching models and methods to meet the ever-changing needs of students. At the same time, the application of big data technology also requires teachers to constantly explore and try, and constantly look for more efficient methods in teaching practice to improve students' learning effect and satisfaction. Therefore, in the era of big data, the innovative teaching thinking of higher vocational physical education has become an important issue that teachers and educators must seriously think and explore. Only through continuous study and practice can higher vocational physical education constantly adapt to the changes of The Times and achieve better teaching effect and teaching efficiency.

**Key words:** big data; Higher vocational education; Physical education; teaching

## 1. The necessity of applying big data technology in physical education teaching in higher vocational colleges

### 1.1 Promoting the reform and innovation of teaching mode

For a long time, the traditional teaching method is teacher-led and students passively receive knowledge. This one-way education model can no longer meet the needs of modern teaching. However, the application of big data technology provides new ideas and new methods for the reform and innovation of higher vocational physical education teaching. First of all, big data technology can help teachers better grasp students' learning situation and subject characteristics, analyze students' academic performance and behavior, so as to determine the teaching direction and strategy. For example, they can use the data of students' test results and learning activities to analyze students' mastery of knowledge points, and based on this, differentiated teaching plans can be formulated. In addition, the analysis of students' learning time distribution and habits can provide better support for teachers, for example, in class, students' habits can be combined to choose the best teaching strategies and methods. In addition, teachers can use big data technology to enhance the monitoring and evaluation of the learning process. Using big data analysis technology, teachers can keep track of students' performance and learning at any time, and use this as a basis to improve teaching programs and correct problems in a timely manner.

### 1.2 Broaden the cognitive horizon of college students

Big data technology can also help broaden the cognitive horizon of college students and improve their understanding, mastery and ability of course content. On the one hand, big data technology can provide more vivid, intuitive and abundant educational resources. By using the Internet and big data technology, teachers can let students have access to rich educational resources, such as multimedia courseware, virtual laboratory, etc., which can strengthen students' course understanding and cognition, and improve their grasp of knowledge points and learning interest. On the other hand, big data technology can also enable students to get in touch with a wider social and cultural environment. For example, with the help of big data analysis, students can learn about sports cultures in different countries and regions, thus further expanding their personal horizons and enriching their life experiences. At the same time, big data technology can also allow students to understand and understand the amount of exercise in different groups, how to quantify the amount of exercise and other information, so as to establish good exercise habits and healthy sports concepts.

## 2. The characteristics of the teaching mode of the integration of big data technology and higher vocational physical education

### 2.1 The characteristics of the mode that breaks the time-space boundary of teaching work

#### 1. Sharing teaching resources across time and space

In the traditional physical education of higher vocational colleges, students can only receive teaching within a certain time and space such as the classroom or the stadium. With the support of big data technology, students can access global teaching resources through the Internet and get a richer and more diversified learning experience. For example, through various online video platforms, libraries and other channels, we can obtain all kinds of high-quality sports textbooks, video tutorials, academic journals and so on. These resources not only enrich students' knowledge system, but also provide them with a more flexible and convenient way of learning.

#### 2. Personalize and differentiate online teaching

Big data technology can not only help students get more teaching resources, but also help teachers better understand students' learning status and needs. Through the data analysis on the Internet platform, teachers can have a comprehensive and accurate grasp of students' learning situation, so as to effectively adjust teaching strategies and methods and realize personalized and differentiated teaching. At the

same time, students can also choose their own learning methods and learning content according to their own interests and needs, so as to improve the learning effect and satisfaction.

### 3. Realize unified management and sharing of teaching resources

Through big data technology, teachers can standardize, classify and standardize scattered teaching resources and establish a unified resource base. Students can obtain these resources anytime and anywhere through the network platform, and use the combination of online and offline teaching methods to learn. This will not only help improve the efficiency and quality of teaching, but also save teaching costs and resources, and improve the sustainability of teaching.

#### 2.2 Fully reflect the characteristics of the model of students' learning subjects

##### 1. Teaching strategies based on students' needs and interests

Under this model, teachers can design course content and teaching strategies according to students' needs and interests, so as to stimulate students' enthusiasm and initiative in learning. For example, in the process of teaching a certain sport, students can be grouped, different students can assume different roles, independently develop training plans, and evaluate training results. In this way, students can better experience their own subjective initiative and participate more actively in the teaching process.

##### 2. Interactive and collaborative based forms of teaching

The model of students learning the subject also means that teaching should be more interactive and collaborative. The application of big data technology enables students to achieve remote collaborative learning and communication through the Internet and Internet platforms. For example, in the teaching process, teachers can teach in the form of online discussion, interactive questions and answers, so that students can actively participate in teaching and discuss and solve problems together. In this way, not only can students' communication and collaboration skills be improved, but also their learning effectiveness and quality can be enhanced.

## 3. The innovation direction and key points of higher vocational physical education in the era of big data

First of all, one of the innovative directions of higher vocational physical education in the era of big data is the innovation of teaching mode. The innovation of modern teaching mode can make teaching more personalized and efficient. With the support of big data technology, a variety of teaching modes can be constructed that meet the characteristics of students and different learning styles, such as inquiry, game, collaboration, etc., and different modes can be compared and evaluated through data analysis to finally optimize the teaching mode. Secondly, the innovation direction of higher vocational physical education in the era of big data is the innovation of teaching methods. The innovation of modern teaching methods can make teaching more interactive, vivid and interesting. Data analysis can reveal the individualized differences and problems of students' learning, and teachers can adopt different teaching methods to solve the problems according to the data results, and combine multimedia, virtual experiments, on-site observation and other ways, so that students can obtain better education results through interactive and participatory learning. Finally, the third innovation direction of higher vocational physical education in the era of big data is the innovation of evaluation methods. The innovation of modern evaluation method can make the teaching feedback more timely, accurate and comprehensive. Through data analysis, teachers can obtain all kinds of evaluation data such as students' grades, assignments, tests, exams, etc., and then conduct multidimensional analysis and evaluation of students' performance, so as to help students quickly correct mistakes and improve learning results. At the same time, teachers can also evaluate and summarize the teaching results through the teaching feedback mechanism, so as to continuously improve the teaching quality and effect.

## 4. Innovative path and practical application of higher vocational physical education in the era of big data

### 4.1 Improve the hardware and software facilities of physical education classroom in higher vocational colleges

First of all, to improve the hardware facilities of physical education classroom in higher vocational colleges is to guide certain modern equipment, such as heart rate meter, pedometer and sports wearable equipment, to help teachers monitor and evaluate students' sports status more comprehensively. Through the collection and analysis of sports data, teachers can better guide students' training and promote their health and physical quality development. For example, in higher vocational courses, the introduction of heart rate meters can help students better master their own exercise intensity and heart rate changes, so as to scientifically and reasonably arrange their own training intensity and amount of exercise to avoid excessive fatigue and injury. Secondly, to improve the software facilities of physical education classes in higher vocational colleges is to guide certain information technology tools, such as smart phones, tablet computers, teaching software, etc., to help teachers manage and design course content more effectively and improve teaching efficiency and quality. For example, in the course design, various multimedia teaching materials and interactive demonstrations can be designed with the help of teaching software, so as to help students better understand and master sports skills and training methods. In the aspect of curriculum management, teaching management software can be used to help teachers monitor and evaluate the classroom situation in real time, so as to improve the classroom efficiency and control ability. Finally, intelligent wearable sports equipment can be added to improve the physical education classroom in higher vocational colleges. Smart wearable sports equipment refers to wearable devices with sensor and communication technology, which can collect individual sports data and transmit it to the Internet or mobile devices. By collecting and analyzing the data, an individual's athletic status can be comprehensively assessed, so that teachers can better guide students in training.

#### 4.2. Strengthen the cultivation of information literacy for students in contemporary higher vocational colleges

With the rapid development of big data technology, modern higher vocational physical education must keep up with the trend of The Times, dig deep and make use of big data technology, in order to promote the continuous innovation and development of higher vocational physical education. However, in order to achieve this goal, we must first strengthen the cultivation of information literacy of students in contemporary higher vocational colleges. In the physical education course of higher vocational colleges, many ways can be adopted to strengthen the cultivation of students' information literacy. For example, through the teaching mode combining curriculum teaching and practice, students can understand and practice how to use big data technology to analyze and solve sports problems. In addition, some cases and applications of big data technology can be introduced in a timely manner, so that students can understand the application scenarios and practical effects of big data technology through case analysis. In addition, higher vocational physical education needs to constantly update the teaching methods and contents according to The Times and students' needs, to adapt to the development trend and needs of the big data era. Only by keeping up with the pace of The Times can we promote the innovation and development of higher vocational physical education. Therefore, while strengthening the cultivation of students' information literacy, it is necessary to constantly explore and try new teaching methods and models to meet students' learning needs and promote the continuous innovation and development of higher vocational physical education.

#### 4.3 Organize activities according to the development goals of physical education informatization

First, with the progress of The Times and the development of science and technology, big data technology has become an important part of modern education. In higher vocational physical education, the application of big data technology is becoming more and more important. Therefore, it is an essential task to organize activities in accordance with the development goals of physical education informatization. Secondly, the curriculum of higher vocational physical education includes sports science, sports physiology, sports education and training and other aspects. With the support of big data technology, teachers can have a deeper understanding of students' individual differences and learning progress, and evaluate and improve teaching methods more effectively. For example, in sports training, by using big data technology to analyze students' sports data, training programs can be designed specifically and training intensity can be adjusted to improve training results. Finally, in order to organize activities in accordance with the development goals of physical education informatization, teachers must first have relevant skills and knowledge. Therefore, higher vocational colleges should strengthen the training and education of teachers and improve their application ability of big data technology. Secondly, teachers need to actively explore new methods of education and teaching, and constantly innovate teaching models according to students' needs and teaching goals. Finally, at the same time, higher vocational colleges also need to improve hardware and software facilities so that teachers and students can better use big data technology.

Conclusion: To sum up, in the era of big data, the innovative teaching of physical education in higher vocational colleges has become a necessary trend. Only by keeping up with the pace of The Times can we better provide a strong guarantee for the future development of students. Therefore, teachers must make full use of big data and information technology, constantly innovate teaching concepts and methods, pay attention to training students' innovative ability and practical ability, so as to better adapt to the future development needs of society.

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