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Opportunities and Challenges of Physical Education in Colleges on the Basis of Big Data

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Abstract. Based on the implementation of the Internet+ in our country, People from all walks of life have paid more attention to the big data. As an essential part of the education system, the physical education in colleges must be influenced by the development and popularity of big data. This paper will analyze the opportunities and challenges of physical education in colleges under the background of the big data, and provide some feasible suggestions and recommendations. Finally the reform and development of physical education in colleges will be improved.

1. Introduction

The big data has been a part of the strategic resource in our country and China has put the development and application of big data to the level of national strategy. As a vital part of the college education, the physical education in colleges is an essential feedback of quality-oriented education, which plays an indispensable role in improving students' comprehensive quality and capability. As the continuous development of the big data, the development of physical education in colleges has changed a lot under the influence of the big data, and some new opportunities and challenges have emerged after that.

2. Opportunities for the Physical Education in Colleges Based on the Big Data

2.1. To Targetedly Improve the Physical Education in Colleges

The big data is applied to the physical education in colleges. We can more comprehensively and accurately understand the information of students' physical quality and mental status and their physical state and life behavior habits could be understood by collecting, analyzing and processing students' physical quality and action data. The big data can collect data, including the daily exercise volume and online click-through rate of students. The physical education instructors in colleges can share relevant learning materials to students according to the collected data as well as the students' physical status, which could enhance the pertinence of physical education and understand the physical condition of students. At the same time, the corresponding exercise programs could be arranged, and the physical fitness of students could be improved in the end.

2.2. To Realize the Individualized Physical Education in Colleges

Some technologies such as the Internet of Things, cloud computing as well as big data are becoming more and more mature, and the demand for basic talents is becoming more and more diversified. The society also gives a hope to find out a new educational concept that will lead the trend of the times and cultivate talents with individuality and innovative spirit. Based on this, the future transformation and development of information and society with knowledge and network will be better adapted. The education reforms all over the world will advocate the implementation of individualized teaching for individual differences among students. The individualized education has become a strong educational trend in the world at the moment.

The traditional physical education in colleges generally adopts standard, unified, and project -

based teaching methods. The teaching method lacks differentiation and individualization, while the individuality of students is developed, which easily overlooks students' interests and their inner feelings. As a result, students are passively attended in physical education classes and even disgusted it.

In the era of big data, through the collection and analysis of student data and the detailed performance of individual students, students' physical status as well as interests, teachers can properly guide students to analyze and evaluate each student's exercise needs and habits and then give students corresponding exercise plans to help students develop their physical potential. According to this, their physical fitness could be improved and the lifelong physical exercises habit will be developed. What is more, their active participation in physical exercise habit and physical exercise plans will be cultivated. The teachers could timely master students' exercise process, determine the most effective teaching methods, optimize the teaching process, and lay a solid foundation for the lifelong sports.

2.3. To Improve Effectiveness and Scientific Decision-making in Physical Education

In a certain sense, we must understand the current sports needs of students and their present physical quality, and then formulate a reasonable physical exercise program that is suitable for students, if we are to improve students' enthusiasm and continuity in participating in sports. In the era of big data, the application of Internet technology has greatly expanded the access to master the real-time data of students, and enriched its content, and its rapid and plentiful characteristics can provide the basis for students to participate in scientific physical exercise.

Due to the presence of big data, the decision-making of sports in ordinary colleges can truly serve the students, in terms of the timeliness of sports work, through the analysis of data, the sports needs of college students can be mastered so as to better serve the students. Some relevant policies will be formulated and the decision-making is no longer determined based on the subjective understanding of the leaders, so the decision-making is more rational and scientific.

3. Challenges to the Physical Exercise Education in Colleges Based on Big Data

3.1. Challenges for the Dominant Position of Physical Education Teachers in Colleges

In the present information society as well as the big data, the source of information is very diversified and extensive, and the college students are active triers and operators of new technology. Through the Internet and desktop computer and other equipment, the college students can know and understand sports-related knowledge at any time. They actively pay attention to the microblog, wechat, and interact with online sports celebrities to learn about sports-related knowledge. Today in the era of big data, due to the natural exploration spirit of college students, some of the knowledge they know may be more than teachers, and even they can teach their teachers about the sports knowledge. In this aspect, the dominant position of teachers in the classroom faces challenges.

In traditional physical education, teachers are regarded as the leaders in the classroom or among the students. They remains the classroom managers, lecturers, and skills demonstrators at the same time. If the communication between the teachers and students is poor, the teaching effect will be passive, and the detailed knowledge of students could not be mastered positively. In today's society, the teachers should actively change roles to interact with students and even they should become friends with students, and learn the details of students. The details of the students make it difficult for the teacher to observe through a lesson or the daily observation, while the help of the details just likes the fusion agent that better harmonizes the teachers and the students. To utilize the intelligence of big data technology, we can easily understand each student through the mobile phone application and the teachers can care about and help students in combination with their details, and finally the enthusiasm and participation of students in physical exercise will be enhanced.

3.2. The Contradiction between Data Collection and Students' Privacy Protection

The powerful analyzing and processing ability of big data technology has already predicted the

direction of future, bringing convenience to our lives and work, but at the same time, our personal data privacy protection faces great risks. If you collect the student's displacement track, you can understand the student's life habits. Through the data collection of the student's physical quality, you can understand the students' physical fitness. These big data can not only bring great benefits to people, but also lead to the harm of personal information disclosure. The reason is that the location big data directly contains the user's private information, but also implies other sensitive information such as the user's personality habits, social relationships as well as their health status. The improper use of these big data can bring serious threats to students' privacy in all aspects. Seemingly, in the vast amount of unconnected data, the big data technology can correlate the data and discover them to fin out the personal privacy data of students. If the student's private data is exposed and controlled by some illegal people, and after spreading from the media, it will have a very big impact on the students, which will bring great trouble to the life and study of the student.

If the information is collected through the big data technology, some errors occur during the collection and processing, and these erroneous data are recorded and stored in the student's data file, it will have a great negative impact on students in the future.

In addition, some data administrators sell student personal privacy data to the third parties for their benefits due to the lack of the professional ethics. Some students information have been smuggled by illegal people due to certain staffs' limited technology or negligent work, resulting in the disclosure of students' privacy data. Only by protecting the student's privacy data can we work better in the future.

3.3. To Verify the Authenticity of a Large Amount of Data

In the Internet era, the Internet is generating a lot of data all the time, and the source of the data is very wide. Due to the openness of the Internet, it is determined that some of the data is real while others are false, making it impossible for us to distinguish the authenticity of the data. Therefore, how to distinguish the authenticity of massive data is a problem for us. How to find the real and valuable data from massive data is a difficult issue in the current big data technology. The authenticity of the data can ensure the accuracy of the big data' analysis and conclusions. The reliability of the data determines the understanding of the students' real situation. These are the issues that we need to explore.

When the internet and big data was underdeveloped, most of our investigations methods were based on the questionnaires or conversation records. When the internet and big data technology have emerged, our data sources can not solely depend on the traditional survey methods, and we have more extensive access to obtain the data. We can record the unstructured data in the form of voice recording, photographing and shooting, and we can also collect data that we could not master them before via the internet and mobile internet. The methods and means of data collection will be more and more convenient, but because of its openness and non-model, the authenticity of the data needs us to verify. For example, we can know students' interest in the physical education by browsing the traces of sports on the internet. However, these data cannot really determine that the student is interested in the sports. He may collect relevant knowledge for their classmates or friends. Another example is that some students like to go to the sports field and stay for a long time through the mobile Internet application, but this does not mean that he is going to movement, maybe they see classmates playing basketball or do other things, some students do not like to go to the sports field, which can not indicate that they do not like playing. They can also do exercise in the dormitory. The above situation indicates that the verification of the authenticity of the data is still difficult.

4. Proposals

To Improve the Big Data Awareness of Physical Education Teachers and Rationally Apply to Big Data. The work concepts and models of teaching and education management staff need to be continuously improved, and the innovation also need to be promoted to achieve the network information. In the era of big data, the physical education teachers should raise awareness of data

information, and clarify the main content of information construction, and based on this the physical education teachers should establish a data-based educational philosophy and mode of thinking. The physical education teachers should use the internet technology to comprehensively analyze various educational resources, and integrate them according to categories, and constantly discover new technologies, new knowledge and new models. In addition, some relevant technical staff must ensure the validity, timeliness and authenticity of the data information, so the accurate data information can be used to apply to various sports work, especially the physical education.

The schools should increase capital investment in purchasing related technical services and hardware as well as software tools, they should positively introduce some relevant talents, and make full use of the big data technology to provide services for the physical education and teaching. For example, the cluster analysis method is applied to obtain the student information with different physical health and physical performance. The association analysis method is used to analyze the causes of students' sports performance and exercise effects. The application of predictive analysis method can guide the establishment of school sports facilities and faculties in physical education.

The relevant education departments and universities in our country should set up a big data sports monitoring and analysis group to collect data on daily behaviors and physical qualities of college students, and provide reliable data for improving the quality of physical education in colleges and formulating various sports policies. The lifelong sports of the students will be ensured in the end.

5. References

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