Research on Innovative Practice Links of Physical Education Course Based on Computer Big Data

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Abstract. The thesis uses literature research, information research methods, and logical reasoning methods. After in-depth research on the current situation of the development of school sports activities between classes, it is found that some schools still adopt the form of interclass exercises due to insufficient hardware or software facilities. The problem is that there is very little communication between schools, and the school itself has no position in the inter-class activities of sports. To fill this gap, we must not only strengthen policies, but also integrate with the rapid development of modern information. In the era of big data, the traditional physical education teaching model is being impacted and challenged. College students no longer like the passive "indoctrination" teaching model, but prefer to explore the autonomous learning method. How does the teaching of sports innovation practice adapt to the era of big data? Development is worth pondering, and it is of great significance to explore teaching models that are conducive to cultivating students' autonomous learning ability and inquiry ability.

Keywords: Computer, big data, sports innovation practice link innovation, sports practice course.

1. Introduction
Big data refers to a data group whose size exceeds the capture, storage, management and analysis capabilities of traditional database software tools. At present, people use it to describe and define the massive data generated in the era of information explosion, and name the related technological development and Innovation. Victor said in the book The Age of Big Data: "If you are a person, if you refuse, you may lose your life; if you are a country, if you refuse the era of big data, you may lose the future of this country and a generation [1]. The future of man". In the era of big data, people's views and decisions on things no longer rely solely on past experience and subjective judgments, and they are more inclined to mine and analyse massive data. In the field of sports, big data has been extremely widely used. Through the analysis and comparison of a large amount of data, relevant personnel can grasp the situation and characteristics of students' sports learning, and formulate targeted teaching programs according to the differences between each student, fundamentally improve the effectiveness of physical education.
2. Analysis of the number of Internet users and Internet penetration rate in my country in recent years

In 1997, the China Internet Network Information Centre conducted an analysis and survey on the penetration rate of the Internet and the scale of Chinese netizens. Until 2019, a total of 36 reports were issued [2]. The report pointed out that the number of Internet users in my country has shown an increasing trend year by year. In the five years from 2015 to 2019, the number of Chinese Internet users has increased by a total of 447 million people, and the number of Internet users in my country has reached 6.68 billion in 2019. Billion (as shown in Figure 1).

![Figure 1. Data chart of the increase in the number of Chinese Internet users from June 2015 to June 2019](image)

The penetration rate of the Internet has also increased from 31.8% in 2015 to 51.8% in 2019 (as shown in Figure 2). In addition, the report also pointed out that with the continuous optimization of the network environment and the continuous popularization of smart collection, the number of users of Internet mobile phones is also increasing, and this number far exceeds the usage rate of desktop computers and laptops. The penetration rate of mobile phones increased from 41.8% in 2015 to 90% in 2019 (as shown in Figure 3).

![Figure 2. Data chart of China's Internet penetration increase from 2015 to 2019](image)
3. Analysis of teaching development of innovative practice links in college sports

In the context of the development of the era of big data, the ways and sources for students to receive information are gradually increasing, which has a certain impact on students' ideological characteristics. Traditional instillation teaching methods cannot stimulate students' interest in learning. Physical education teachers in colleges and universities need to follow the development of society and the characteristics of the students, targeted to carry out the teaching of sports innovation practice links. Under different social development backgrounds, college sports innovation practice teaching shows different development characteristics, as shown in Table 1:

| Era of social development | Education model                | Educational characteristics |
|---------------------------|--------------------------------|-----------------------------|
| PC era                    | Digital education model        | multimedia                  |
| Internet age              | Social education model         | Networked                   |
| Mobile internet era       | Ubiquitous education model     | popularize                  |
| Big Data Era              | Individualized education model | Autonomy                    |

It can be seen from the above table that, compared with previous education models, the teaching model of college sports innovation practice in the era of big data pays more attention to individualization and autonomy, and there is a broader space for innovation in teaching content and teaching mode. The course of college sports innovation practice plays an important role in cultivating students' correct view of sports, expanding students' knowledge and improving students' cognitive level [3]. However, affected by the coordination between theory and practice, colleges and universities showed insufficient class hours, outdated content, single method, and disconnection from practical courses in the teaching of sports innovation practice, which led to poor results in college sports innovation practice, and college students generally lacked participation awareness of physical exercise has caused the physical level of our college students to decrease year by year in recent years. Physical education teachers in colleges and universities need to take students as the main body, give full play to their own guiding role, provide students with rich learning resources, for students to carry out independent exploration, help students develop interest in sports learning, and improve the teaching level of college sports innovation practice links, Promote the all-round development of students.

3.1. Lack of attention to sports innovation practice links

Some colleges and universities regard mastering physical skills as the goal of physical education, making practical courses the focus of college physical education, presenting the teaching status of
"emphasizing practice and neglecting theory". The political science concept points out that the theory plays a role in promoting the development of events, and the theory is also applicable to education, industry and other fields [4]. As far as physical education in colleges and universities are concerned, the process of innovative practice needs to occupy the dominant position. At present, some colleges and universities have fewer physical innovation practice links, which affect students' physical knowledge reserves, low teaching quality, and affect the overall development of students and need to be improved.

3.2. Insufficient depth of teaching content in innovative practice links
In view of the phenomenon of "emphasizing practice and neglecting theory" in college physical education curriculum, the proportion of innovative practice links and practical courses in college physical education is seriously unbalanced, and the class hours of innovative practice links are significantly less than practical courses. In particular, the innovation practice links related to the history of sports development, sports industry and sports culture in my country are only hurriedly introduced in the teaching of innovation practice links, without in-depth explanation and analysis [5]. For the sports innovation practice link, the above content is related to the cultivation of students' sports literacy and is an important part of college sports. Simple teaching makes the status quo of college sports not meet the requirements of education system reform and affects the effect of college talent training.

3.3. Single teaching method for innovative practice links
At present, most colleges and universities are equipped with multimedia equipment. Teachers can use multimedia courseware to integrate the key points of college sports innovation practice sessions. In actual teaching, some teachers used the content of the courseware as the basis and promulgated the courses according to the text, resulting in a boring classroom atmosphere, low student participation, and difficulty in stimulating their interest in learning [6]. As a result, the phenomenon of students playing mobile phones in college sports innovation practice sessions is widespread, and the teaching effect not ideal.

4. Analysis of the types of teaching modes of college sports innovation practice in the era of big data
In the context of the development of the big data era, the new teaching modes that are often used generally include micro-classes, flipped classrooms, and MOOCs. The characteristics and teaching forms of these teaching modes are different.

4.1. Enriching teaching methods, perfecting teaching content, and building an open physical education classroom teaching system
To carry out physical education reforms and implement open-ended extensions, it is necessary to enrich and innovate physical education forms, reform the previous single teaching form, enhance the interaction of the classroom, break the previous single class teaching mode, and actively encourage students to learn from the interest of learning. Based on the basis, independent arrangement of teaching content, optimization of teaching forms, enrichment of the teaching system, by actively encouraging students to actively participate in the reform of physical education, and finally constructing an open physical education classroom teaching system [7]. The main content of the implementation of the teaching reform emphasizes that under the guidance of the fully open physical education teaching model, teaching activities have gradually changed from the traditional teaching ideas in the past to new teaching ideas and models, and the setting of teaching content has also changed from the previous single skill teaching. Transform into diversified content such as lifelong sports, fitness sports, and the cultivation of the spirit of mutual assistance and cooperation. Figure 4 shows the physical education model based on flipped classroom.
4.2. **Integrate students' interests, combine talent training requirements, and improve the effectiveness of teaching activities**

In order to ensure that the entire physical education activities achieve the desired results, in the implementation of the open-ended extended physical education reform process, through the development of a variety of teaching organization methods, combined with rich sports facilities, on the basis of fully integrating the students' interest in learning, optimizing the physical education activities Effective [8]. Open extended teaching is a brand-new manifestation of physical education in the new era. It is not only a great innovation of teaching mode, but also a great teaching progress. It has a great driving force for both teachers and students. In the process of implementing the open-ended extension of physical education reform, not only should we pay attention to cultivating students' cognitive ability of physical education, but also closely integrate teaching practice and student training.

4.3. **Optimization mechanism of online open course resources**

The construction of online open courses is not done once and for all. After it is completed, it needs to be continuously adjusted with the trend of physical education reform, that is, constantly updated with the times under the thinking of big data. Curriculum writers must not only closely contact the trends and hotspots of physical education curriculum, but also combine the actual situation of the school's curriculum reform with the core ideas of physical education curriculum [9]. The teaching reform results and experience summaries from the frontline can be effective Promote the construction of learners’ teaching ideas. Curriculum data update should keep pace with the reform trend of curriculum teaching, so it is necessary to regularly identify, eliminate, and modify the case resources in the database. Under the thinking of big data, online open curriculum resources can not only develop and supplement new fields and hotspots in the practice of curriculum reform, but also have a high degree of scalability and flexibility in scientific management. Only when the scientific analysis of data is transformed into the source of decision-making and motivation to promote the construction of case base under the thinking of big data can the management value of data be truly reflected. All in all, improving big data management thinking is to optimize the construction of the case library and realize the path navigation, and it is the guarantee to highlight the timeliness, forward-looking and flexibility of management and decision-making.
5. Conclusion
Based on the above, we can see that with the progress and development of the times, the global coverage of the Internet has continued to expand, and the world has entered the era of big data. Under this development background, students' independence and independence has also continued to increase. Due to the lack of innovation and low teaching quality, the traditional physical education theory teacher model has been unable to meet the needs of the times. New teaching models such as micro-classes, flipped classrooms, and MOOCs have been highly recognized and applied in the education field due to their respective advantages. These new teaching models have fully mobilized the enthusiasm of learning and urged students to change from passive to active, further improve their ability to explore and think independently. In the future, physical education teachers should introduce new teaching models on the basis of traditional teaching theories, complement each other's advantages, attach importance to the individual development of students, comprehensively improve the quality of physical education, and promote the overall development of my country's physical education.

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