Era of Big Data Is Based on The Study of Physical Education Teaching Mode In MOOC

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Abstract: With the advent of the era of big data, it provides a new vision and broad thinking for the evaluation of physical education teaching in colleges and universities. Using the knowledge of big data to study the physical education evaluation system in colleges and universities can not only promote the implementation of physical education evaluation in colleges and universities, but also effectively improve the quality of physical education teaching in colleges and universities. With its characteristics of popularity and openness, MOOC has become a brand new learning platform, changed the traditional educational concept, provided the latest and most effective educational resources for the educated to learn, and exerted a great influence on the current education system. Physical education, as an important part of the education system, is no exception. Based on the TEACHING mode of MOOC in the era of big data, this paper conducts a certain research by adopting the methods of questionnaire survey and expert interview, and concludes that MOOC learners are as young as 13 and as old as 40. Among them, male learners account for 69%, female learners account for 55%, users aged 13-18 account for 13%, users aged 17-21 account for 75%, users aged 21-29 account for 24% and users aged 29-40 account for 14%.

Key words: Big Data Technology, MOOC Teaching, Physical Education Teaching

1. Introduction

With the continuous development and progress of the society and the comprehensive popularization of the Internet, the traditional teaching mode can no longer meet the requirements of the development of the new era. The emergence and use of MOOC platform not only makes up for the deficiency of traditional teaching mode, but also gives the majority of students freedom. You can observe and study what you don't know over and over again, enabling students to integrate what they have learned and driving educational reform to a certain extent. Under the influence of the policies of "Sports for All" and "Lifelong Sports", some MOOC platforms have also set up physical education courses to promote the general public to learn physical education, cultivate their interests in physical education, and
develop the habit of lifelong sports, providing corresponding guidance to sports lovers or beginners, so that people can form a correct concept of physical situation. Given the openness, diversity and longevity of MOOCs, as well as the autonomy, randomness and motivation of the participants, the development of MOOCs has become increasingly more popular. Sports MOOCs are also keeping a close eye on MOOCs. Many sports-related colleges and institutions have already started MOOCs and will expand this trend.

In response to the emergence of MOOCs, a rising star in education, many teams of experts have studied this phenomenon. Some excellent teams argue that massive Open Online courses (MOOCs) have and will continue to change the way non-traditional learners receive education. Although these free elements are associated with low completion rates due to lack of investment interest, MOOC platforms are able to experiment with innovative technologies and practices [1]. Therefore, it is recommended to increase the completion rate through more intensive teaching practices rather than attributing the various intentions of students to the high dropout rate. In this way, it is important to understand the broader benefits of MOOC participation for learners and what factors are critical to their participation and retention. The current study qualitatively analyzes the public feedback obtained from learners in relation to course participation objectives. The feedback also matches the initial course intent, the value of course materials and activities, the preferred range of teacher interactions, unit completion, and the categorization data associated with their overall MOOC rating. Other outstanding teams put forward the following Suggestions: explain the nature of MOOC from the perspective of "what and what" of MOOC, and believe that MOOC essentially solves the problem of globalization of educational resources, promotes the co-construction, sharing and opening of high-quality educational resources, and solves the problem of educational equity in society [2]. Leading professors have suggested that MOOCs, compared with existing higher education, will develop in intersecting, parallel and overlapping forms if they are two parallel lines. How MOOC will be integrated with higher education in the future mainly depends on the development trend of MOOC technology. MOOC technologies and platforms in the future if still is efficient to help learners to explore knowledge, built for learners to have fun learning content, then to "mu class" as the template of the large-scale network education there is a strong possibility to replace the existing higher education system, as one of the main platforms of accept educators learn and develop high-level [3]. Although these teams of scholars have rich research results on MOOCS, they do not fully integrate MOOCS with big data technology.

This paper takes the physical education teaching model based on MOOC in the era of big data as its research object, focuses on analyzing the decisive role of big data in MOOC in college education, and comprehensively applies the knowledge related to big data and physical education evaluation to explore how to build an evaluation system of college physical education that meets the requirements of the era of big data.

2. Method

2.1 Big Data Technology
Educational big data refers to the data set generated in the whole process of educational activities and collected according to educational needs, all of which can be used for educational development and create huge potential value. With the booming development of the Internet, the era of "big data +" has emerged. In the past 10 years, big data has been widely used in all walks of life. It covers education, government, finance, medical care, transportation, industry, tourism, business, logistics, telecommunications, e-commerce, energy, security, electricity, agriculture, animal husbandry, music and many other fields. In short, big data has shown a comprehensive trend of diffusion and penetrated into all aspects of human life [4].

The application of big data in sports has been increasing in recent years, mainly covering sports industry, live broadcast of events, etc., especially in competitive sports, and also in sports teaching. With the rise of big data application, it is possible to conduct automatic physical education teaching
evaluation in colleges and universities. Big data can provide a large number of data to support the evaluation of physical education, so as to make the evaluation of physical education more scientific and fair. Meanwhile, the evaluation of physical education teaching driven by big data can feedback the results of physical education teaching evaluation in a more timely manner. Big data poses challenges to the current physical education teaching evaluation system in terms of technology, system, system and other aspects. Therefore, it is very necessary to explore and build a college physical education evaluation system that meets the requirements of the big data era, has reliability and operability, and truly promotes the development of students and physical education teachers [5].

Up to now, the generation of a series of high-end electronic devices has provided the possibility for the collection, analysis and application of big data. Smart wearable devices have been gradually applied in mass sports, which can promote people to understand their physical conditions and make corresponding adjustments. For example, xiaomi bracelet, Apple IWATCH and so on are on the market. Although these "wearable" devices are already within reach, they are generally worn on an individual basis, with few large-scale applications in education.

2.2 MOOC Physical Education
MOOC is short for "Massive Open Course" and also transliterated as "MOOC" in China. MOOC is essentially online micro-course, which is a general term for various international and domestic online micro-course platforms with characteristics of "large scale, low cost, online and shareable". In essence, it is not a new thing, it is still a distance online education, open education is a kind of resources, but it is different from general remote online education and open education, it is the integration and improvement of the two kinds of education form, can realize the higher education system, fully online courses, in the true sense make online learning effective [6]. The rapid rise of MOOCs is no accident.

From the perspective of society as a whole development first, first of all, the development of information technology will the world be in harmony are an organic whole, the globalization of information resources and instant messaging creates the appearance of the MOOC may, and the emergence of the MOOC has promoted the globalization of education, information, make the education across time and space, brings the learning experience of people more convenient. Secondly, the demand of the society to promote balanced and fair development of education and the expectation to promote the improvement of teaching quality promoted the transformation of traditional education, so education began to walk into the network and into tens of thousands of families. From the perspective of the development of education itself, the ever-changing cultural knowledge requires education to keep pace with The Times. MOOC changes the information lag of traditional education in a better linear way [7]. Secondly, the traditional teaching "to the teachers, classroom teaching as the center," is to the student, is also the process of learning, the emergence of the MOOC liberation "to the teachers, classroom center" done "to the student center", the openness of the MOOC provides more and better liberated "" at the center of the teaching material, teaching resources more comprehensive teaching resources to realize the better according to their aptitude. In addition, MOOC has realized faster information transmission and learning mode anytime and anywhere, which can be said to be the most efficient learning mode at present.

As far as college physical education is concerned, MOOC construction in China is still far from perfect. First of all, the MOOC China Physical Education Alliance is still far from perfect, and the participants of college physical education have not been fully absorbed. What is being built is only a small regional alliance. Secondly, the MOOC-based physical education examination certification system has not yet been established, with low social recognition, high difficulty in promotion and little motivation for students to participate. MOOC sports training platform used by Chinese students in sports is still under construction. From the perspective of technology, China still lags far behind western developed countries [8].

2.3 Coefficient of Variation
Coefficient of variation refers to the coordination degree of experts, the smaller the coefficient of
variation, the higher the coordination degree. The coefficient of variation, >0.25, is considered to be of low coordination [9]. The calculation formula is:

\[ V_j = \frac{S_j}{m_j} \]  

\[ m_j = \frac{1}{n} \sum_{i=1}^{n} x_i \]  

\[ S_j = \sqrt{\frac{1}{n-1} \sum_{i=1}^{n} (x_i - m_j)^2} \]

Where is the coefficient of variation, is the standard deviation, and m is the mean value.

3. Experiment

3.1 Expert Interview Method

Through interviews with MOOC scholars, especially those who study physical education courses in MOOC, the actual situation of physical education courses in MOOC at the present stage, opinions of experts and future development situation are mainly understood, so as to provide basis for further research.

3.2 Questionnaire Survey

In this study, all the sports interns in the physical education major of colleges and universities who participated in the internship work were the survey objects, and a questionnaire survey was conducted [10]. They were distributed before and after MOOC learning respectively, so as to understand the status and influencing factors of teaching reflection consciousness and teaching reflection behavior of physical education interns before and after MOOC learning. This questionnaire is divided into three parts: the sports interns' recognition of the cultivation of teaching reflective consciousness and behavior in the practice stage, the current situation of school cultivation, teaching reflective consciousness and teaching reflective behavior.

4. Discussion

4.1 MOOC User Evaluation

After students and teachers in the sports network curriculum, the sports network curriculum feel there are some differences, but for the most part, students and teachers for the physical network courses are open identity, attitude to that under the modern education development and reform, the sports network curriculum actually adapt to the need of modern education, but also meet the learning needs of students and the teacher's teaching requirements.
As can be seen from Figure 1, the overall attitude of students towards online physical education courses is positive and they prefer it. 67% of the students think that the teaching effect of MOOC PE course is better than that of traditional PE course. In addition, 12% of the students think that the teaching effect of ONLINE PE course is very good. Some students also think that compared with traditional courses, 11% of students think that MOOCs have only moderate teaching effect, while the remaining students think MOOCs have no teaching effect.

### 4.2 Physical Education Practice Curriculum and Physical Education Theory Curriculum

| Number of theoretical courses | Number of practical courses | total | Proportion of total practice courses |
|-------------------------------|----------------------------|-------|-------------------------------------|
| 110                           | 90                         | 200   | 50                                  |

Table 1. Quantitative Analysis of Physical Education Theory Courses And Physical Education Practice Courses

From table 1 we can see that most foreign universities and domestic colleges and universities is based on the theoretical knowledge is given priority to, teach the basic knowledge of sports theory knowledge, health care, health, life, etc, the skill class teaching is less, the sports courses in MOOC platform quantity is less, get rid of the sports theory course only 90 sports practice course, the different curriculum model in the same sports. Analysis of the existing MOOC sports classes found that MOOC platform in most of the physical education curriculum is a sports physiology, sports anatomy, sports and health, and other theoretical knowledge [26], while there are some classes but is mid-term exam sports skill teaching, one's deceased father grind class certificate for physical education, physical education teachers to cope with the test content, related to sports less specific sports skills.
4.3 The Effective Days of Students' Extracurricular Exercise

From Figure 2, we can see that from March to June, the number of effective exercise days per capita was 7 days, 10 days, 14 days and 10 days respectively, showing a trend of high in the middle and low on both sides. One semester beginning march days lowest per capita effective exercise, the second is the end of the semester, the number two months during the semester is much better than that at the beginning of the semester and at the end of the semester, may be the first, everyone is lazy, near the end of the semester, everyone was to review the examination to test subjects, failing to exercise reason leads to the result.

4.4 Study on MOOC Learning Groups

**Table 2.** Gender and Age Analysis of MOOC Learners

| Age/gender | 13—16 | 17—21 | 21-29 | 29-40 |
|------------|-------|-------|-------|-------|
| male       | 6%    | 40%   | 15%   | 8%    |
| female     | 5%    | 35%   | 9%    | 6%    |

It can be clearly seen from Table 2 that, according to the latest research, MOOC learners are as young as 13 and as old as 40. Among them, male learners account for 69%, female learners account for 55%, users aged 13-18 account for 13%, users aged 17-21 account for 75%, users aged 21-29 account for 24% and users aged 29-40 account for 14%. This indicates that most of the MOOC users are young adults of higher education and vocational education, while the majority of users of other ages are aware of and use MOOCS.

5. Conclusion

Through research and research, it is one of the important concepts of big data to discover the characteristics of data and the law behind data extraction. The ideal result of applying big data in public physical education curriculum is to fully understand students' sports and health condition, provide personalized training formula, predict students' sports mode and health condition, and promote physical exercise habit. This comes with the age of big data. With the emergence of MOOCs, although each class is only ten minutes long, the advantage of MOOCs is that you can watch them over and over again, you can watch them many times if you don't understand, but because some students have the attitude of completing the internship credits or think they understand that universities no longer
need to communicate with students about the internship school. From the start of a MOOC to the end of a course, all practitioners are organized into a class at a fixed time each day, via multimedia or other electronic means. Repeat the projection and learning to let the athletes know more about the video content. At the same time, work from home completion was monitored after study and in a similar exam format to help them improve their reflective awareness and behaviour. Observe and learn in depth. Based on this situation, the FORM of MOOC in the public tennis teaching in the united universities is new, and the emergence of teaching skills is clear. The implementation of MOOC better implements the teaching philosophy of "student-centered", enriches the teaching form, and optimizes the application of teaching in the classroom.

Acknowledgements:
Xinjiang University Doctoral Research Funding Project (BS190128)

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