Fitness app Application Research Based on big data and algorithm

Xiangkun Meng
Guangzhou Nanyang Polytechnic College, Guangzhou 510925, Guangdong, China
mengxiangkun@gznylg.edu.cn

Abstract. This paper analyzes the application of fitness app based on big data and algorithm, and uses literature review and big data analysis technology. Through the analysis of fitness app, it is found that all kinds of fitness app network content is lack of shaping the correct values of practitioners. Through the analysis of the advantages and limitations of moral education in the current fitness app, in order to play the biggest role of moral education in fitness app, and make suggestions for the construction of multi-dimensional moral education.

Keywords: big data, algorithm, fitness app, moral education

1. Introduction
With the progress of human society, especially the continuous development of Internet technology, there are two social forms, namely, real society and network society, and at the same time, there are two kinds of cultural forms, namely, real social culture and network (virtual) social culture. Virtual sports culture is a new sports culture style which is accompanied by the development of network and sports. Like the real sports culture, virtual sports culture is an indispensable part of the contemporary world sports culture [1]. Sports app has a certain influence on the length, frequency, intensity and type of exercise users take part in daily exercise. At present, most users have certain psychological dependence on smartphones, and the necessary equipment for going out is also mobile phones. Sports applications use smartphones as the main carrier, which can remind users of relevant sports at any time. The demand of users is increasing, and the function of mobile phone is also improving. Sports app is suitable for multi-age users and provides effective and feasible sports programs. The sports video of standardization specialty, detailed physical education, sports online shopping center meeting the needs of customers' shopping, interactive user social circle, etc. All are the needs of contemporary people. Through advocating sports, we call for the trend of comprehensive sports [2].

2. Brief introduction of sports fitness app
App refers to the third-party application software designed and applied to smart phones, tablet computers and other mobile devices. Fitness app refers to the third-party application program of smart phones or wearable devices that can guide fitness training, analyze fitness movement data, advocate health concept and guide healthy life. With the characteristics of easy to learn, easy to understand and strong pertinence, it is favored by more and more young people. With a smart phone, you can get audio or video guidance; you can always check the changes of sports data; detect heart rate, blood pressure and other indicators;
you can also guide and monitor food and sleep; you can also check the changes of sports data; Also has direct interaction function and so on [3]. Different styles of APP give people different experience It can meet the needs of different people's fitness. Some users need professional fitness guidance and make exercise prescription according to different people's physical conditions; Some users hope to be able to track their own movement related data, so as to fully understand their own movement status and make appropriate adjustments; some users hope to maintain their functions at a healthy level from diet and sleep.

2.1. Review of related research on fitness app abroad
In the article of S yuan, the author conducts a questionnaire analysis on 317 American college students. Based on the current situation of users, the author uses the unified theory of extended acceptance and technology use (utaut2) [4]. In the article of S yuan, the author conducts a questionnaire analysis on 317 American college students. Based on the current situation of users, the author uses the unified theory of extended acceptance and technology use (utaut2) the following four factors affect application and view are obtained by model to statistics and analysis data: Performance Expectations, hedonism, price values and habits [5]. Beldad et al. pointed out that fitness or running applications are highly popular in Germany. The author uses the structural equation model to find out three factors of the intention of the respondents to continue using specific fitness applications, such as perceived ease of use, perceived usefulness and taboo social norms. Usability, taboos and descriptive social norms significantly promote the user's trust in fitness application developers. Kristen Julia Anderson introduces the functions and characteristics of fitness application. After intense work and learning, it is recommended to use fitness application to participate in physical exercises, such as yoga, running and aerobic sports activities. Yi Yumi et al. Conducted online and offline surveys on college students in their 20s, sorted and analyzed the data obtained, aiming to determine the influence of the differences of sub factors of communication ability on the types of sports participation (club, application use), and found the difference of the total score of communication ability according to fitness application by t-test. To determine the impact of communication skills on fitness application. The scores of fitness application users were significantly higher than that of (P < 0. 010) 6.02 points, 114.58 points, not user scores 108.56 points [6].

2.2. Review of related research on fitness app in China
The research focuses on the function of fitness app, the status quo of fitness app, development mode and existing problems. Wang Lifang found in her research that the number of female students using fitness app is more than that of male students. Based on the research and analysis of students' motivation and attitude in using fitness app, she pointed out that there are some problems in fitness app, such as inaccurate data, memory occupation and incomplete action explanation, and gave corresponding suggestions. Fu Jintao shows the functions and characteristics of fitness app and the actual needs of College Students' physical exercise. Through the investigation of students who have used fitness app, it is found that these students use fitness app After reasonable fitness exercise, students spend more time on sports than when they don't use it, their physique has been improved, and their sports awareness and exercise habits have been greatly improved. Ge Tianlun studied the influence of College Students' use of fitness app on the number, time and motivation of physical exercise. The results show that the use of fitness app can increase the number of students' exercise, prolong the exercise time, help the cultivation of good sports motivation, and meet the students' Sport’s needs. In the research of Mou Qianqian et al., the author uses the methods of literature review and text content analysis to sort out the online evaluation data of user experience of fitness app by using software such as Rost, and analyzes the current situation of user experience through word frequency, semantic network, emotion, etc., finds out the problems and gives the author's development suggestions. The results show that "Sports", "software" and "fitness" constitute the core layer of user word frequency in the current situation of user experience The problems are as follows: the user demands are not related to the design, the function content is difficult to balance with the demand, and the online and offline social fitness experience is out of line. In view of the
problems, the following suggestions are given: improve the multi-information service, improve the user's "Cognition + thinking" experience; develop the intelligent social fitness, improve the user's "action + sense" experience; improve the user's "action + sense" experience; Improve the development of fitness function, improve the user experience of "association + emotion". To sum up, most of the previous research methods are questionnaire design, mainly based on audience use, attitude and evaluation Price and other aspects of the questionnaire questions, the collected data statistics, processing and analysis, fitness app. The investigation of the use status, the analysis of the functions, characteristics and problems provide a lot of theoretical support for this paper Support, this study from college students, to extracurricular sports activities as a starting point for research, the fitness class. App is connected with extracurricular sports activities to find out the missing.

3. Analysis on the application status of sports fitness app for college students in China

According to the statistical data of "China fitness app user detection report", the number of fitness app users in China continues to grow. It is widely used among college students, accounting for 78.5% of the total. The time period of students' application in extracurricular sports activities is from 17:00 to 21:00, and the continuous use time is mostly within one hour. Students use the top three apps for keep, Yuedong circle and Xiaomi sports, the most widely used app is running app. In terms of application functions, it mainly includes step counting function, movement time recording and movement track recording, watching fitness education videos and learning fitness knowledge. With the enhancement of people's health awareness and the continuous improvement and innovation of science and technology, fitness apps will continue to grow in the future, as shown in Figure 1.

![Figure 1. Use of fitness app in China from January to September 2016](image)

According to the statistics in July 2018, keep ranked first with 14.3884 million users, followed by Xiaomi sports with 7.1513 million users, Yuedong circle with 6.12 million users, new oxygen beauty with 3.3986 million users, and Ledi and Yueyue running circle with 2.8826 million users and 2.4891 million users. The number of users of Lexin sports, mint health and Chunyu pedometer is about 1.3 million.

The motivation analysis of using fitness app shows that the main way for students to choose fitness app is media publicity and school requirements, and nearly a quarter of the students have independent needs. The first purpose of using fitness app to participate in extracurricular sports activities is to lose weight, keep fit and shape, which is of great significance to fitness app. The evaluation has a general attitude. The biggest problem is that the traffic consumption is too large to use offline. The second is that the functions are mostly the same and single.
Fitness app has a negative impact on college students. In college students' extracurricular sports activities, there are some problems to be solved, such as frequent use of electronic screen, fragmentation of extracurricular time, lack of scientific physical exercise plan, difficult to maintain exercise habits, single function application, difficult to maintain application habits, lack of standardization in management, risk in use, insufficient guidance from school authorities, and unreasonable evaluation methods.

4. Moral education in sports fitness app
In the process of using sports fitness app, the application program will provide words, words or pictures to encourage the subjects to comply with the set goals after they reach a certain goal. The post exercise running, walking and cycling app will also draw a simple roadmap based on where you are at the end of the exercise. Many students say that it's very pleasant to see the inner experience of the overall roadmap after each exercise, and motivate themselves to better achieve their goals.

Sports fitness app has obtained the praise and evaluation of students through card printing and sharing results, which can stimulate the sports interest of college students. The exercise time of 4 hours and above in the week after using the sports fitness app was significantly improved than that of the previous 2 hours and below.

Before using the sports fitness app, if the tested students want to carry out sports, they will be limited by sports items, sports venues, number of participants, time period, etc. under the background of "Internet +", they can use the sports fitness app to carry out unarmed fitness, abdominal muscle exercise, 7-minute exercise, etc. in dormitories, classrooms, playgrounds, parks and other places. Through our investigation and analysis, we know that after the application of sports fitness app, the tested students' weekly exercise frequency is 5 times or more, which is significantly higher than the previous 2 times or less.

Under the background of "Internet +", sports fitness app can automatically record and store users' physiological and physiological indicators in the software, so as to provide more scientific exercise guidance for students. After the test, students can clearly check their energy consumption in physical exercise and master the practice. You can also input your sports needs according to your performance consumption. Sports fitness app will make a more scientific physical exercise plan according to the needs, and fully ensure the effect of exercise on the basis of meeting the needs of students' exercise intensity.

5. The value and significance of sports fitness app infiltrating moral education
Promoting the development of sports culture through the network form of fitness app not only promotes the students to learn the correct way of physical exercise, exchange their experience in sports and share the happiness they feel in the process of sports. It also promotes the development of sports culture to form a diversified, diversified and integrated development, so that sports culture can better serve human beings and constantly meet the needs of human beings for sports culture.

The promotion of multi-dimensional sports moral education is based on the Internet, which is also closely related to the technical rationality and humanistic spirit of sports. It plays an extremely important role in promoting the progress of sports culture and the development of social sports. In terms of the combination of sports spirit and sports technology progress, the combination of "Internet + sports" and moral education will better build China's sports culture.

To meet the spiritual needs of the public, with the continuous improvement of living standards, sports has become an important part of people's lives. Network moral education can be well combined with the information industry, and become a new way of moral education in Colleges and universities. It is an indispensable part of the whole process and all-round education. Network moral education makes up for the various needs of sports culture in the virtual society, which can not be met by the real physical education teaching, and effectively provides a platform for college students to learn more about sports knowledge.
Physical education in Colleges and universities also needs to integrate the education of socialist core values, carry forward the main theme, strengthen the identity education of Chinese sports culture, and strengthen the education of sports professional ethics and ideals and beliefs. Physical fitness App has a natural advantage in shaping the socialist core values and sports knowledge in students' daily autonomous learning, and plays a very good subtle role. It can be used as an auxiliary course before traditional sports class. Through the visual network teaching, students can deeply understand the sports culture, and then realize the heterogeneity of sports culture in the operation of sports industry. Students' cognition of sports knowledge is not only the basis of understanding sports culture, but also the effective guarantee of establishing sports culture self-confidence and shaping socialist core values.

6. Concluding remarks
Sports fitness app It makes up for the disadvantage of our country to pay attention to classroom teaching for a long time, and it lacks the network education integration platform dominated by self-study, and forms a new mode and pattern of mainstream app network teaching. As one of the main promotion places for sports fitness app, colleges and universities can not only let students learn the corresponding sports skills in time and freely, but also cultivate their family and national conditions Arms. With the continuous development of the reform of higher education in China, the attention of teaching reform personnel to the teaching of sports fitness app moral education has been enhanced. The app of "Internet + sports" affects the development of virtual moral education in Colleges and universities. The use of sports fitness app not only helps college students achieve the purpose of strengthening their physical fitness, but also contributes to promoting the three education of college students.

Acknowledgments
This paper is the main research achievement of the joint construction project of the 13th five-year plan for the development of philosophy and Social Sciences in Guangzhou in 2020 (Project No.: 2020gzgj316) and the party construction research project of Guangdong Province in 2020 (Project No.: 2020mb029). Thanks for the help of Kunming Vocational and Technical College of Industry and Guangzhou Nanyang Polytechnic College.

References
[1] Fang Rui, Wen Qinglong. Research on the promotion of sports appkeep on students' sports behavior in Higher Vocational Colleges under the background of "Internet +" [J]. Modern business industry, 2020 (12): 44-45
[2] Lai Rongliang. Analysis of network sports culture information dissemination in the "Internet +" era [J]. Journal of Guangzhou Institute of physical education, 2018 (38): 72-76
[3] Wang Yating, Zheng Qi. Value analysis of sports fitness app on virtual sports culture in Colleges and universities [J]. Journal of military sports, 2020 (1): 78-88
[4] Qi Qi. Application and Countermeasures of fitness app in sports fitness activities [J]. Journal of Xi'an University of Arts and Sciences (NATURAL SCIENCE EDITION), 2020 (1): 99-104
[5] Shi Xiaoxue. Research on the application of fitness app in college students' extracurricular sports activities [D] Nanjing Normal University, 2020
[6] Meng Xiangkun. Research on Outward Bound Training in Higher Vocational Colleges Based on goal orientation [J]. Continuing education research, 2019 (6): 88-91.