Main Content and Implementation Path of College Sports Informatization Construction

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Abstract. Information technology not only has a revolutionary influence on the development of physical education, but also plays a strategic role in the development of physical education. Based on the current situation and significance of sports informatization development in colleges and universities in China, the author makes an in-depth analysis of informatization innovation of sports teaching and research, optimization and management of sports training, physical fitness monitoring and evaluation, cloud platform construction of extracurricular sports activities and competitions, scientific material selection and talent cultivation of young athletes, and intelligent management of campus competitions. From the aspects of the development goal of college sports informatization, the establishment of information platform, the building of characteristic team, the utilization ability of sports teachers’ information and the utilization of information achievements, this paper puts forward the implementation path of college sports informatization construction, aim to provide theoretical support and practical guidance for college sports informatization construction and development in China.

1. Introduction
Information technology has a transformative impact on the development of physical education, and it plays a strategic role in the development of physical education, which lays a profound foundation for the combination of college physical education and information technology [1]. With the in-depth development of information technology, all walks of life have ushered in new development opportunities, and college sports are also facing many opportunities and challenges. The integrated development of college sports and information technology has become the core task and urgent demand of China's college sports informatization construction [2]. Because the development of college sports informatization in our country is very lagging behind, the lack of talents and technology, and the current national strategic environment is very inconsistent. In view of the key problem of the integrated development of information technology and physical education, university physical education should be deeply integrated with information technology and carry out collaborative innovation from theory, technology, application, evaluation and other aspects.

At present, China has made a long-term plan in the aspect of education informatization, vigorously promoting the comprehensive development of education informatization [3]. In order to respond to the call of the state and keep pace with the development of The Times, the advanced technology and concepts of information science are applied, and through the integration of "Internet +", big data and artificial intelligence with college sports, the development model of college sports is innovated and guided to support and lead the leapfrog development of college sports [4]. Through the means of information construction, we can monitor the physical condition of students and faculty, monitor their physical activity, set up a platform for physical activity guidance and service, guide students and faculty to take physical exercise scientifically, improve the physical quality of students and faculty,
and promote the formation of lifelong sports awareness. Comprehensive, specific analysis of the sports team training, competition, management, scientific research and other status quo, accurate, timely response to the existing problems, formulate the corresponding countermeasures, guide their scientific training and management, improve the results of the competition, for China's college sports innovation and development to provide certain theoretical support and technical guidance.

2. Current Situation of College Sports Informatization Construction

2.1. Insufficient Utilization of College Sports Information Platform
At present, information technology has been linked with the whole world, accelerating the process of education informatization and making education present a trend of trans-temporal and regional development [5]. The development of sports informatization has become an important way for sports around the world to rapidly improve their competitiveness, which is bound to promote the development of college sports informatization, but also the inevitable choice in the new stage of the development of college sports in China. According to the investigation, although some colleges and universities in China have set up the information platform of students' physique health monitoring system, the platform is just a decoration, not really used. Both the ministry of education and the general administration of sport have information technology centers, whose main duties are to provide macro guidance and carry out special construction to serve the ministry's macro management and scientific decision-making. Although the campus sunshine sports platform and the national fitness platform have been built, their effect is not good due to the outdated management mode, backward product functions and single promotion mode. How to effectively integrate college sports and information technology, establish sports information platform and make full use of it, and guide students to take scientific exercise and live a healthy life has become an urgent problem for the country.

2.2. The Lack of Physical Education Information Teaching Resources in Colleges and Universities
On the one hand, the informationized physical education resources can go beyond the narrow educational content, let teachers and students' life experience into the physical education process, so that the teaching is active. On the other hand, it can change the status of students in physical education, from passive receiver of knowledge to constructor of knowledge, so as to stimulate students' learning initiative and enthusiasm. At the same time, it can also broaden the educational horizon of teachers, change the educational concept, make it possible to exchange and share various educational resources, especially material education resources, and make it more and more possible to transform physical education curriculum resources inside and outside the school, thus realizing the integrated physical education teaching model inside and outside the school. While many companies and universities and teachers' personal certain sports information construction of teaching resources, but more for purely physical material resource, and the selection and application of PE material environment is not the same, in the face of their students, teachers in the process of choosing sometimes do not know how to start, or to make changes again, teachers need to spend a lot of effort to do it, some are contrary to the original idea, and even affected the physical education teaching quality improvement. It is necessary to make full use of information technology, integrate physical education resources, build high-quality and rich physical education information teaching resources, so as to meet the diversification and subjectization of physical education process, so that teachers can obtain the physical education resources they want in limited time, and promote the formation of effective independent learning mode of students.

2.3. The Research on College sports Informatization Lags Behind
At present, the domestic haven't sports informatics professionals, research in the field of sports information is computer science and technology professional scholars and interdisciplinary study of sports science, involved in the application layer of the research is focused on the market of products, mainly in the form of platform form the ecological environment of the Internet products, mainly related to sports fitness, running, sports facility operation and management, and other mobile terminal
applications. Since China started later than foreign countries, there is no corresponding discipline, so the situation that those who understand sports do not understand informatization and those who understand informatization do not understand sports has been formed. These mobile terminal products are not well combined with technology research, and the technical content is generally not high, mainly through content and capital movement to achieve profits. Research fields such as Internet of things, artificial intelligence, competitive training technology, physical education and physique monitoring are still blank at present.

3. Main Contents of College Sports Informatization Construction

3.1. Information Innovation in Sports Teaching and Research
The innovation of information sports teaching and research is mainly reflected in three aspects: first, information sports teaching design; second, mobile education and ubiquitous learning; third, innovative sports teaching research [6]. To explore the innovative and supporting role of new information technology in sports teaching and learning, fully explore the advantages of new technology through the principles and methods of teaching design, overcome the limitations of new technology, use the role and potential of new technology to innovate or support sports teaching, and finally promote the good development of college sports and healthy growth of students. Through information technology, the realization of mobile learning platform, intelligent terminal, the integration of college sports education and application, the development of wearable devices of mobile learning tools and based on the cloud platform of university sports service products, sustained and in-depth theoretical study, technology innovation, incubation system and test evaluation, to demonstrate the application of the research work, to guide the college sports innovation research and practice activities.

3.2. Optimization and Management of Sports Training
Through the integration of complex data acquisition and monitoring technologies through sensors, the athletes are observed in all aspects that affect their performance at all times and in all dimensions. And get specific information from the data, find out the key points that affect the athletes' training state and performance, and implement effective solutions; Using audio-visual analysis equipment, big data can quantify the factors that affect athletes' performance during training, such as training load, sports recovery, and human body regeneration. Using data generated during exercise to control training so that athletes are not pushed into danger zones, nor do they underestimate or bury their talents; 4D simulation technology and big data are used to simulate the movement methods of elite athletes, quantify each strength, Angle and power, analyze the physiological indicators and physical quality characteristics of elite athletes, and provide scientific basis for the training and diagnosis of college athletes. Management platform, through the establishment of information system for colleges and universities at all levels to provide competition performance, athletes, coaches, sports, such as data query, real time control of the race to help coaches and managers training work, to form effective intelligent dynamic management system, to provide data to support the dynamic adjustment of training and management strategies.

3.3. Physical Fitness Monitoring and Evaluation and Cloud Platform Construction of Sports Competition
Research and development of physical education and exercise guidance cloud platform, students physical health, physical education curriculum learning and exercise, students extracurricular exercise implementation of dynamic management. With the help of the sensor device (sports bracelet or sports vest) collected from the front end, the teacher and the student can transmit the sports load, physical condition and movement track through the background algorithm and GPS positioning of the server. Teachers and the system arrange the amount of exercise according to specific conditions and quantitative data, conduct scientific exercises, avoid sports injuries, and formulate sports prescriptions and implement accurate guidance for students. Students can also acquire relevant physical education knowledge of elective courses on the platform for self-learning. Meanwhile, extracurricular exercise
monitored by the platform can be an important part of final physical education results. The above systems will be integrated to form the ecosystem inside and outside the physical education class and cultivate students' awareness of lifelong physical education. Research and development of community management and sports social cloud platform, teachers through the platform to the club, sports association (community), computer management and organization, in addition to the regular sports events such as, still can make college, class, individual can complete courtyard, between classes, people about the game, about exercise, form better sports experience; Each class and school can master and compare the effect of physical exercise, students' physique, community participation and participation in sports events, and guide the dynamic adjustment of sports work. At the same time, it also quantifies and accurately manages the sports work of the whole school, forming a good and effective sports management and service mechanism.

3.4. Scientific Selection of Young Athletes

Using the cutting-edge technology and advanced concepts of information technology, such as Internet science, big data analysis and application, 4D motion analysis and tracking, to collect a large number of special data such as scientific selection of young athletes; Through the study of the common problems in the selection index of high-level athletes in colleges and universities and the personality problems of elite athletes, the scientific selection index system of young athletes was established. Through intelligent hardware automatically or manually test data to the system, according to each project selection index of selection model library, the coach will use the system for each player to find suits own sports, at the same time through the sensor to upload data system will also be intelligent selection of talents and provide coach and high level sports teams in colleges and universities. Through the establishment of material selection platform, education platform, social platform database, guide scientific material selection, management and training.

3.5. Intelligent Management of Campus Events

Through information technology, the network platform of campus events is built to form an information system integrating qualification examination, registration statistics, event arrangement, score system, result query and event analysis. Colleges and universities can release relevant event notices, information and documents through the established event network system, and the participating units, coaches and athletes can query the results of the competition in real time, and conduct comparative analysis and management of the historical records of the competition.

4. Implementation Paths of College Sports Informatization Construction

4.1. Formulate Development Goals Reasonably and Build a Blueprint for the Development of Sports Informatization

College physical education is an important part of China's education, and its informatization development will inevitably require the reform of the existing physical education structure [7]. How to adapt to this situation and keep up with the pace of the new information age is a problem that must be considered. Colleges and universities should make clear the goal and plan of the informationization development, according to the development trend of information technology and the overall demand of modern college sports, and according to the overall development plan of the state for college sports, formulate the informationization development plan of college sports, and establish the goal and implementation plan of the informationization construction of college sports. From the strategic point of view to allocate college physical education resources, college physical education teaching activities, venue facilities and extracurricular sports organization to adjust and improve, to achieve the overall optimization of college physical education.

4.2. Strengthen the Use of Information Technology and Establish an Information Platform for College Sports

College sports information platform is an important bridge for the full sharing of sports information. College sports as the core, student-centered, make full use of the advantage of modern information
technology discipline, to create a university sports and information technology combined with the characteristics of the platform. Through the collection of relevant information of college physical education and students, it provides basic information for the information system of physical education, group activities, physical health, sports team construction, sports research, etc., so as to meet the demand of teachers and students for sports information and support the realization of various functions of college physical education. Through the information platform, the dynamic real-time and visual functions can also be realized to master the physical health and physical exercise trends of teachers and students in real time and monitor their exercise intensity. At present, college sports information technology mainly include WeChat available public platform, sports APP software, web portal, such as the Internet technology, to make full use of existing information technology platform, vigorously promote the innovation in colleges and universities sports information research, innovative way of college sports development, improve the level of teachers and students physical health, rich campus culture life, the healthy development of the power of colleges and universities sports science [8].

4.3. Build a Featured Team and Build a Sports Informatics Discipline
Colleges and universities can make use of their existing talent advantages to build a high-level and international sports informatization research team through internal training and external recruitment to cultivate leading talents in the field of sports informatization. Colleges and universities should give preferential policies to attract outstanding talents to participate in the research and application of sports informatization, and cooperate in training sports informatization talents. At the same time, a reward system should be established to promote teachers in colleges and universities to conduct extensive research and practice. Through team building, talent training, scientific research and other activities, the development direction of college sports informationization is condensed, and the research path combining sports science and information technology is constructed, striving to become a secondary discipline of sports science or computer science and technology, namely sports informatics.

4.4. Enhance Physical Education Teachers' Ability and Attach Importance to the Training of Sports Information Talents
Teachers are the main users of sports information, and the improvement of teachers' quality is the key to enhance teachers' information awareness and ability to use information [9]. We should give full attention to teachers' technical training, improve teachers' quality from the aspects of education, sports skills and information knowledge, and improve teachers' information awareness and ability to use sports information network. College sports information construction must pay attention to the training of sports information talents, give full play to its role. The qualified colleges and universities should focus on training comprehensive talents who combine information technology with physical education and devote themselves to the construction of college physical education informatization.

4.5. Make Use of Information Achievements to Promote the Development of College Sports Information
Under the present status of the college sports information in China, the development of colleges and universities sports information exists quite a lot of difficulties, but the construction and utilization of sports information can't wait till the time is right, must try to as soon as possible, the results of the development of informationization, as much as possible, establish college sports information network platform, the sports information after data collection, sorting, analysis, and then to WeChat public platform, web portal, bulletin board, leaflets and other forms to the teachers and students is feasible. Therefore, in the current situation, we should make full use of information technology and field guidance and other forms, do everything possible to pass the sports information achievements to teachers and students, promote the continuous optimization of college sports structure, accelerate the process of college sports information construction.

5. Conclusion
In a word, the traditional way of college PE teaching methods, management, personnel selection, training, etc has been strong enough to support the development of new era college sports need, to
realize the goal of college sports, must deepen the reform of college sports, college sports development innovation, make full use of big data, Internet + Internet of things, new information technologies such as artificial intelligence, improve the university teaching quality and level of sports, science teaching, selection, training, management, competition, etc., to promote the healthy development of university sports in all aspects.

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7. References
[1] Fengjuan J, Feng W, Impact of Information Technology on Higher Education, J. Peking Univ. (Phil. and Social Sci.) 2008 pp 152-158.
[2] Shuangyan Y, Development Mode of College Sports Informatization in the Context of the Internet of Things Era, Proceedings of 2012 International Sports Science and College Sports Academic Conference, 2012.
[3] Yunwu W, Lin C, Current Situation and Future of Strategic Planning of Education Informatization, Chinese Medical Edu. Tech. 2012 pp 1-5.
[4] Chuanyin C, Peng D, Development of Chinese College Physical Education: Problems, Opportunities and Paths Based on the Five Development Concepts of the 13th Five-year Plan, J. Sports Research 2016 pp 1-6.
[5] Yanming X, Core Elements of Modern Higher Vocational Education Informatization Construction, Vocational Education Research 2016 pp 41-44.
[6] Wenhua F, Informationized Teaching of Selective Physical Education Courses in Colleges and Universities, Sports Sci. Research 2013 pp 85-88.
[7] Pan L, Weijun D, Research and Design of College Physical Education Informatization Teaching Platform, Chinese J. ICT in Education 2012 pp 44-46.
[8] Shuangyan Y, Hongmei Z, Development of College Sports Informatization Based on the Internet of Things Era, Heilongjiang Researches on Higher Education 2014 pp 73-75.
[9] Jiaiqiao D, Bin G, Discussion on Coping Strategies of College Physical Education Teachers from the Perspective of Sports Informatization, Sport 2016 pp 66-67.