ISSN: 2710-0170

Research on the Intelligent Construction and Optimized Development Path of College Stadiums

Xin Wang, Jianjun Lin*

Ningbo University, Zhejiang, China

Abstract

The research on the optimal development path of intelligent construction of college stadiums can improve the level of intelligent service of college stadiums at home and abroad, enhance the utilization rate of college stadiums, effectively crack the problem of unbalanced and insufficient allocation of college stadium resources, meet the growing and diversified exercise needs of students and teachers to the maximum extent, and promote the development of higher quality of national fitness, which has very important theoretical guidance significance and it is of great theoretical guidance and practical application value. As an important place in colleges and universities, college stadiums must keep up with the trend of the times and make full use of intelligent technology to provide better service and intelligent experience. The construction of college intelligent stadiums is imperative. General Secretary Xi Jinping emphasized that "the concept of health-first education should be established, and physical education classes should be offered in full, so as to help students have fun, enhance their physical fitness, improve their personality and refine their will in physical exercise. In this paper, by investigating the wisdom status of sports venues in the most representative 15 colleges and universities in Ningbo, a random sample of research was conducted, using literature, mathematical statistics, fieldwork, Delphi method and questionnaire survey. In the process of wisdom construction, the special characteristics of different venues need to be considered, and it is important not to copy the model of popular venues, but must adopt the path suitable for universities. On the other hand, using the Internet of Things, big data, VR technology, cloud computing, virtual reality and other emerging information technology, we can solve the problems of "low utilization rate, poor service quality, slow service level, old facilities and equipment" and other problems in the construction of university sports venues, and provide important feasible ideas for further development.

Keywords

Smart Venues; Wisdom; Wisdom Empowerment; Optimization Path.

1. Introduction

All manuscripts must be in English, also the table and figure texts, otherwise we cannot publish your paper. Please keep a second copy of your manuscript in your office. When receiving the paper, we assume that the corresponding authors grant us the copyright to use the paper for the book or journal in question. Should authors use tables or figures from other publications, they must ask the corresponding publishers to grant them the right to publish this material in their paper. Use italic for emphasizing a word or phrase. Do not use boldface typing or capital letters except for section headings.

Do not number your paper: All manuscripts must be in English, also the table and figure texts, otherwise we cannot publish your paper. Please keep a second copy of your manuscript in your office. When receiving the paper, we assume that the corresponding authors grant us the copyright to use the paper for the book or journal in question.

ISSN: 2710-0170

2. Study Design

In order to comprehensively and meticulously understand the wisdom construction of college stadiums, the stadiums of the most representative 6 colleges and universities in Ningbo were investigated in various forms and in three dimensions, the first dimension is wisdom function and service, the second dimension is wisdom hardware facilities, and the third dimension is teaching and venue management. Seven evaluation indicators were set in the dimension of wisdom functions and services, eight evaluation indicators were set in the dimension of wisdom hardware facilities, and six evaluation indicators were set in the dimension of teaching and site management. The evaluation indexes are set based on a lot of reading literature and summarized after discussion with expert teachers, which are representative and, at the same time, more common, with very high recognition by teachers and students, and easy to build in college stadiums[4].

2.1. Construction of Intelligent Functions and Services

In order to better quantify and describe the construction of intelligent functional services of Ningbo university sports venues, this paper subdivides the construction of intelligent functional services into 7 indicators, including online venue booking, match viewing information push, sports circle and friendship, sports live broadcast and video playback, campus sports app, sports performance ranking, sports data processing and personal health, and investigates these 7 indicators. It is found that there are large disparities among major universities, among which Ningbo University has a relatively good construction situation. The specific data are shown in Table 1.

Table 1. Construction of intelligent functions and services

	Ningbo University	University of Nottingham Ningbo	Ningbo College of Engineering	Zhejiang Wanli College	Ningbo College of Finance and Economics	Ningbo Institute of Technology
Online Venue Booking	Yes	Yes	None	Yes	None	None
Match viewing information push	Yes	Yes	None	Yes	Yes	None
Sports circle and friendship	Yes	Yes	None	Yes	Yes	None
Live sports and video replay	Yes	Yes	Yes	None	None	Yes
Campus Sports App	None	None	Yes	Yes	None	None
Sports Performance Ranking	Yes	Yes	None	Yes	None	None
Exercise data processing and personal health	Yes	Yes	None	Yes	Yes	None

Through the survey and visit, we found that the campus sports app promotion is better. Zhejiang Miles College, Ningbo Nottingham University has been using the "music health" APP

ISSN: 2710-0170

to guide students after school practice and exercise. Ningbo University chose to customize the app, is still in the relevant construction, will be put into use.

2.2. Construction of Intelligent Hardware Facilities

In order to better quantify and describe the current situation of the construction of intelligent hardware facilities in Ningbo university sports venues, this paper roughly subdivides the intelligent sports facilities into a total of 8 indicators, including intelligent access control, intelligent screen, intelligent camera, intelligent light control, wearable device, intelligent locker, vending machine and multimedia classroom, and investigates the core indicators in many aspects, and finds that the sports venues of major universities in this dimension The overall level is uneven. The specific data are shown in Table 2.

Table 2. Construction of intelligent hardware facilities

	Ningbo University	University of Nottingham Ningbo	Ningbo College of Engineering	Zhejiang Wanli College	Ningbo College of Finance and Economics	Ningbo Institute of Technology
Intelligent access control	Yes	Yes	Yes	Yes	Yes	Yes
Smart Screen	None	None	None	Yes	None	Yes
Smart Camera	Yes	Yes	Yes	Yes	Yes	Yes
Intelligent Light Control	None	Yes	None	Yes	None	Yes
Wearable Devices	None	None	None	None	None	Yes
Smart Locker	None	Yes	None	Yes	Yes	None
Vending Machines	Yes	Yes	None	Yes	Yes	Yes
Multimedia classroom	Yes	Yes	Yes	Yes	Yes	Yes

The data shows that the stadiums of 5 universities are equipped with relevant multimedia classrooms, wisdom screens, wisdom cameras, but the number of cameras and the level of wisdom of cameras are not rich enough. Among them, the configuration of vending machines is better, and five university venues are equipped with relevant vending machines. The configuration of smart access control and wearable devices is poor. only two universities are equipped with smart access control and only one university is equipped with wearable devices[5].

2.3. Teaching and Site Management Construction

In order to better quantify and describe the construction status of teaching and venue management dimension, the dimension is specifically divided into online course selection, distance courses and teaching, virtual reality interactive courses, venue traffic statistics, intelligent management of field facilities and equipment loss, and information management platform, a total of six indicators are investigated, and the survey finds that the construction of

ISSN: 2710-0170

online course selection and information management platform in each university sports venue are two indicators The situation is better. The specific data are shown in Table 3.

Table 3. Teaching and site management construction

	Ningbo University	University of Nottingham Ningbo	Ningbo College of Engineering	Zhejiang Wanli College	Ningbo College of Finance and Economics	Ningbo Institute of Technology
Online Course Selection	Yes	Yes	Yes	Yes	Yes	Yes
Distance Learning and Teaching	None	Yes	Yes	None	Yes	Yes
Virtual Reality Interactive Course	None	Yes	None	None	None	None
Venue footfall statistics	Yes	None	None	Yes	Yes	None
Intelligent management of field facilities and equipment wear and tear	Yes	None	None	Yes	None	None
Information Management Platform	Yes	Yes	Yes	Yes	Yes	None

After relevant investigation and research, the site management mode of these six universities are directly managed by universities and online course selection, four universities have built information management platforms, five universities can carry out relevant courses and teaching, and only Ningbo University and Nottingham University Ningbo can carry out virtual reality courses [6].

In summary, by investigating and understanding 21 indicators in multiple dimensions, 7 indicators are good. The remaining 14 indicators are poor or average [7]. It shows that the current situation of smart stadium construction in Ningbo colleges and universities is relatively not very satisfactory, and there is still a lot of room for improvement.

3. Analysis of the Realistic Dilemma of the Construction of Intelligent Stadiums in Universities

3.1. Lack of Relevant Financial Support

The budget gap between key institutions and ordinary institutions for stadium investment is large, and the problem of funding directly affects the construction related to college stadiums [8]. Different policies between colleges and universities, different operation and management modes, and inflexible investment methods cause a single investment method for the construction of smart stadiums, relying on college input. Based on the above two reasons, the constraint of lack of financial support for college smart stadiums is difficult to solve in a short time [9].

ISSN: 2710-0170

3.2. Insufficient Attention from Universities

In recent years, China has increased the importance of college sports and popular sports and introduced a series of related policies, but in recent years, a bad phenomenon generally exists that emphasis is placed on academics at the expense of sports, and the importance and investment of colleges and universities on sports is far less than the construction of academics and disciplines [10]. On the one hand, the relevant leaders and responsible people have insufficient knowledge and understanding of wisdom venues and inadequate knowledge reserve, on the other hand, due to the low percentage of sports related to the national assessment of universities, which leads to insufficient attention to the construction of wisdom stadiums in universities [11].

3.3. Lack of Unified Standards and Theoretical Support for Construction

The concept of smart stadiums is an emerging concept, and there is still no unified construction standard and perfect construction theory, not to mention a clear development plan and overall development logic. Problems with the use of the venues, such as the inability to access the information and financial departments of our university, cause a mismatch between the facilities equipped or the functional services developed and the popular needs of teachers and students [12] [13].

3.4. Lack of High Quality Stadium Management Talents

Talent plays a vital role in the development and construction of smart stadiums [14]. Especially the management and operation link, if there is a lack of stadium management and operation talents, and the concept of management and operation cannot keep up with the development of smart stadiums, then all the good hardware facilities are just pavilions in the air and cannot play their maximum effectiveness [15]. However, the current situation of the universities in Ningbo is the lack of high-quality stadium management talents, the age structure of stadium staff is large, the mobility of personnel is slow, and the ability of staff to accept new things and the concept of smart stadiums is insufficient.

4. Analysis of Faculty and Student Willingness and Satisfaction

The survey was conducted according to different universities, status, gender, age group and education, etc. A total of 279 valid questionnaires were collected, and the specific data are shown in Table 4.

Table 4. Fundamental analysis of the research sample

High School	Identity	Gender	Age	Academic qualifications	Number of exercises per week	Weekly exercise hours
Ningbo University 47	Teacher 90	Male 140	Under 18 years old 4	Undergraduates 150	0 times 30	Less than 1 hour 20
University of Nottingham Ningbo 62			18-25 years old 190	Master's Degree 70	1-2 times 48	1-3 hours 89
Ningbo Engineering College 50			26-30 years old 30		3-4 times 55	3-5 hours 55
Zhejiang Wanli College 33	Student 189	Female 139	31-40 years old 20	Doctoral students 49	5-6 times 53	5-7 hours 48
Ningbo College of Finance and Economics 47			41-50 years old 45		7 times - 10 times 69	7-9 hours 50
Ningbo Institute of Technology 40			50 years old and above 10	Other degrees 10	10 times and above 24	More than 9 hours 17

ISSN: 2710-0170

4.1. Analysis of the Willingness of Teachers and Students to Build Intelligent Sports Venues in Universities

In the survey, the willingness of teachers and students to build intelligent sports venues in colleges and universities is relatively high, and the total number of teachers and students who choose willing and very willing accounts for 73.57%, which fully indicates that the willingness of teachers and students to build intelligent sports venues in colleges and universities is high, and the specific data is shown in Figure 1.

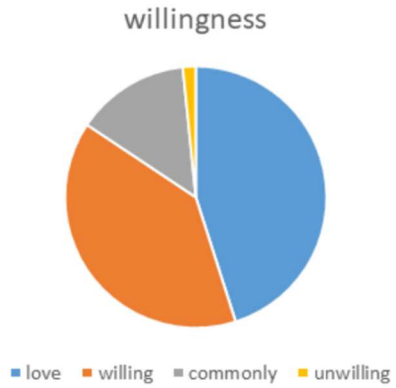

Figure 1. Analysis of students' and teachers' willingness to build sports complexes in universities

In order to understand whether the composition of the sample has any effect on the willingness to build smart sports venues, we conducted an ANOVA on seven elements of the sample: college, status, gender, age, education, number of sports per week, and length of sports per week. The specific data are shown in Table 5.

Table 5. Analysis of variance (ANOVA) for the willingness of teachers and students

	Reluctance (n=5)	General (n=39)	Willingness (n=109)	Would love to (n=126)	F	P
Your university	4.00±2.65	3.40±1.68	3.70±1.70	3.66±1.69	0.756	0.665
Who are you	1.67±0.58	1.19±0.40	1.07±0.26	2.66±0.69	2.498	0.045*
Your gender	1.33±0.58	2.51±1.12	2.12±0.47	1.47±0.50	0.820	0.489
Your age group	2.67±0.58	1.43±0.77	1.28±0.56	2.36±0.84	1.798	0.167
Your education	2.00±1.00	1.43±0.77	2.12±0.47	1.29±0.53	1.092	0.229
Number of times you exercise per week	1.67±0.58	2.55±0.80	1.72±0.86	2.76±1.02	1.425	0.331
Your weekly exercise hours	1.67±0.58	1.96±0.88	2.61±1.03	2.01±0.85	1.298	0.228
*p less than 0.05, **p less than 0.01						

The results of the analysis showed that the six factors of college, gender, age group, education, number of sports per week, and length of sports per week did not have differential effects on the willingness to build smart sports venues. Identity has a differential effect on the willingness to build smart sports venues in colleges and universities. After further study of the questionnaire data, it was found that the overall mean score of students and teachers'

ISSN: 2710-0170

willingness to build smart stadiums were the same, both were 4.15. In the unwillingness option, teachers who chose unwillingness accounted for 5% and students who chose unwillingness accounted for only 10%. The specific situation is shown in Figure 2.

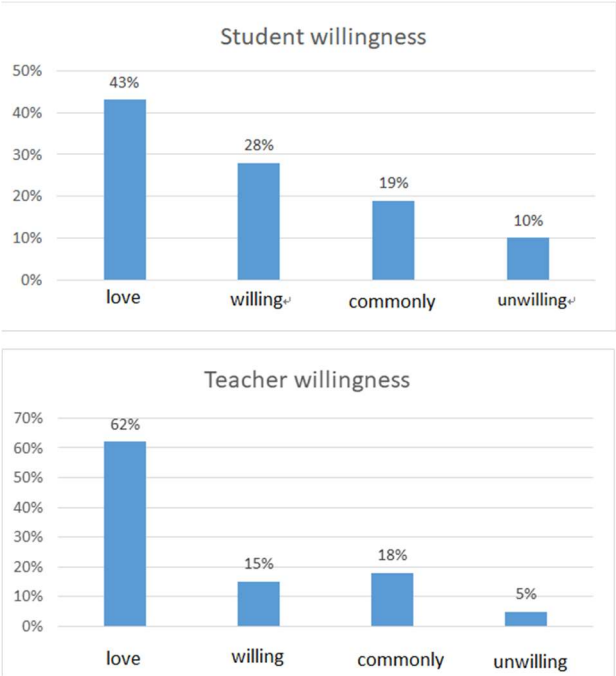

Figure 2. Graph comparing the willingness of teachers and students

4.2. Satisfaction Analysis of Teachers and Students for the Construction of Intelligent Stadiums in Universities

After investigation, students and teachers are less satisfied with the current wisdom degree of their college stadiums. 52.33% of students and teachers choose general, dissatisfied or very dissatisfied, which means that students and teachers are generally satisfied with the current wisdom degree of their college stadiums, and the specific data are shown in Figure 3.

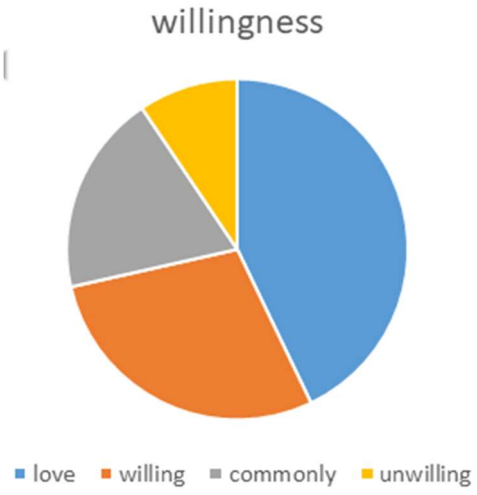

Figure 3. Satisfaction analysis of students and teachers on the degree of wisdom of their university sports venues

In order to understand whether the basic situation of the sample has any effect on the satisfaction of the degree of wisdom of the stadium, we conducted an ANOVA on seven elements

ISSN: 2710-0170

of the sample: college, status, gender, age, education, number of sports per week, and length of sports per week. The specific data are shown in Table 6.

Table 6. Analysis of variance (ANOVA) for faculty and student satisfaction

	Dissatisfied (n=5)	General (n=39)	Satisfied (n=109)	Very satisfied (n=126)	F	p
Your university	3.00±1.35	3.88±1.41	3.41±1.64	3.53±1.84	1.231	0.192
Who are you	1.40±0.55	1.35±0.49	1.19±0.39	1.10±0.30	2.218	0.078
Your gender	1.33±0.58	1.24±0.44	1.44±0.50	1.45±0.50	1.137	0.489
Your age group	2.17±0.38	2.88±1.27	2.39±0.91	2.20±0.63	3.286	0.07**
Your education	1.40±0.89	1.35±0.61	1.38±0.69	1.37±0.63	0.886	0.347
Number of times you exercise per week	3.00±1.41	2.41±0.94	2.67±0.92	2.53±0.83	0.871	0.499
Your weekly exercise hours	2.20±1.10	1.82±0.53	2.03±0.92	1.63±0.69	2.051	0.098
*p less than 0.05, **p less than 0.01						

The results of the analysis in Table 3-3 show that the 6 factors of college, gender, status, education, number of sports per week, and length of sports per week have no differential effects on the satisfaction of the degree of wisdom of sports venues. Age group has a differential effect on the satisfaction of the degree of wisdom of the stadium, specifically the higher the age group the lower the mean score of the satisfaction of the degree of wisdom of the university, the lower the satisfaction. The specific data are shown in Tables 7.

Table 7. Effect of age group on the degree of wisdom of the venue

X/Y	Dissatisfaction	General	Satisfaction	Very satisfied	Average score
Under 18 years old	0	0	0	100%	5
18-25 years old	9%	41%	28%	22%	3.96
26-30 years old	0	58%	28%	14%	3.28
31-40 years old	27%	46%	16%	13%	3
21-50 years old	20%	55%	15%	10%	3
51-60 years old	50%	18%	18%	14%	2.5
60 years old and above	0	0	0	0	0

Based on the above survey, we can conclude the following:

(1) In terms of willingness: Firstly, the willingness of students and teachers to build smart sports venues in colleges and universities is relatively high. In addition, there is no differential influence of the basic information of teachers and students on the willingness degree of building smart stadiums in six factors: college, gender, age group, education, number of sports per week, and length of sports per week[16][17], there is a differential influence of identity on the willingness degree of building smart stadiums, and the proportion of teachers who choose not willing to build smart stadiums is much larger than the proportion of students who choose not willing to build smart stadiums , this result suggests that it may be some teachers who raise objections in the process of building smart stadiums in universities[18].

ISSN: 2710-0170

(2) In terms of satisfaction: firstly, the satisfaction of students and teachers with the current degree of wisdom of sports venues in their universities is low. In addition, there is no differential effect of 6 factors of basic information of teachers and students, namely, university, gender, identity, education, number of sports per week and length of sports per week, on the satisfaction of the degree of wisdom of stadiums[19], and there is a differential effect of age group on the satisfaction of the degree of wisdom of stadiums, specifically the older the age group is, the lower the mean score of satisfaction of the degree of wisdom of colleges and universities is, the lower the satisfaction. This result shows that the older the age group is the more dissatisfied and the more demanding the degree of wisdom of college stadiums[20].

5. Research on the Development Principle and Feasibility Optimization

5.1. Development Path of User Needs: Find the Development Goal According to the Needs of Teachers and Students

What kind of wisdom stadium we need to build, what equipment is included, what services are included, how to reach a high level of wisdom, how to select the suitable content for our own university from the wide variety of wisdom content, and find the target of development according to the needs of teachers and students. If you have sufficient funds for scientific research, you can set the development goal higher, equip more hardware facilities and equipment for wisdom, and develop more wisdom-related functions. If the funds are not sufficient, we can develop the basic framework of stadium wisdom and develop basic functions in accordance with the national policies, and then gradually enrich the wisdom facilities, equipment and functional services [26].

5.2. Development Path of Government Needs: Data Sharing, Service Efficiency, and Establishment of Information Management Platform

The construction of smart stadiums must establish a relevant information management platform, which can link universities, stadium management, teachers and students users together, and can visualize the operation status, indicators and related data of stadiums, thus greatly improving the efficiency of operation and management, and improving the utilization rate and service level of venues. It is an integrated management system, including user management, venue management, information management, financial management, etc. The key to promote digitalization and digitalization is in data sharing, process synchronization and multi-professional collaboration. College stadiums deepen the application of BIM technology as a carrier to build a big data system to achieve the sharing of all professions, which significantly improves the penetration and accuracy of project-based management [27].

5.3. Development Path for Social Needs: Cost Reduction, Marketing, Development of Multifunctional Services by Priority

In the infrastructure dimension, we measured the average score of each type of facility and equipment, and the higher the average score, the higher the demand for this item. In the dimension of teaching and site management, the priority is given to the development of the functional items, and the average score of each functional item is measured from the perspective of the needs of students and teachers.

To prioritize the development of functional services, the average score of each type of functional service was measured, and the higher the average score, the higher the demand for this service, and then ranked to obtain the priority of the development of the functional service dimension.

According to the results of the questionnaire, the most frequently visited sports venues by teachers and students are basketball court, athletic field, badminton court, table tennis court,

ISSN: 2710-0170

soccer field, gymnasium, volleyball court in order of 10% or more, so under the restriction of objective factors such as funds, we can give priority to the development of the top ranked This is more in line with the needs of teachers and students.

5.4. The Proposed Viable Development Path of College Stadiums

Schools should actively expand their ideas, change the single investment structure, actively explore new operation and management mode and investment mode, use public-private partnership mode to introduce social funds, and provide relevant financial guarantee for the construction of college stadiums.

The construction and development of college wisdom venues cannot be separated from the cooperation and linkage of major departments of colleges and universities, but also cannot be separated from the support of colleges and universities in policy and system. The government needs to formulate rationalized policies to guarantee the further development of college wisdom venues, colleges and universities should incorporate the development of wisdom sports venues into the development planning of colleges and universities, and escort the development of wisdom sports venues from the policy and system.

In the development process, it is necessary to strengthen the training of relevant personnel, and at the same time, focus on the introduction of relevant Internet thinking, venue management talents with intelligent thinking and ability, so that the effect and advantages of smart venues can be brought into play [28].

Network infrastructure is the foundation in the process of construction and development of college stadiums. In the era of high-speed development of mobile Internet, perfect wireless network equipment is necessary for colleges and universities to be equipped to guarantee that teachers and students enjoy stable, high-speed network experience in the stadiums. Establishing digital information management platform is the core element of college stadium construction and development. With information management platform, it is possible to connect various intelligent facilities, data and intelligent services in series [29].

Through intelligent app, WeChat applet or relevant public number, etc., the functional experience of the user side of teachers and students is enriched, so that teachers and students can experience richer, more intimate and intelligent venue services. Teachers and students can make online venue reservation, online game viewing, online class selection, real-time understanding of venue usage through the client, and also allow teachers and students to use credit points to borrow relevant sports equipment. Focus on the experience of teachers and students, while enriching the functions of the client.

For colleges and universities with conditions, the existing venues can be renovated and upgraded, and the wisdom facilities can be integrated into the sports venues. Colleges and universities can also equip many hardware facilities and equipment according to their own characteristics, and continuously enrich the functions of the wisdom venues.

High-quality information on sports and cultural activities can be pushed through public numbers. Using smart stadiums can enrich and drive many similar peripheral services, which integrate entertainment and socialization and can greatly stimulate the enthusiasm of teachers and students for sports, and also invariably enhance the construction of college sports culture.

The intelligent venues can also meet the demand of opening to the society by means of face recognition and health monitoring, and can apply for membership cards for teachers, students and residents through the information management platform. It can realize both the opening of college sports venues to the public and the sharing of resources between different colleges and universities, establishing cooperation mechanisms and allowing user data interoperability.

ISSN: 2710-0170

6. Research Conclusions and Recommendations

6.1. Research Findings

(1) The current situation of the construction of sports venues in universities is complete, the types of venues basically cover popular sports, the number as well as the area can basically meet the teaching and exercise needs of our teachers and students, at the same time, the problem of the response is that the types as well as the number of wisdom equipment in the sports venues of universities are not sufficient, and the relevant wisdom function services are not rich enough. By making full use of relevant technologies to develop university intelligent stadiums can solve the problems of poor operation, low utilization rate of venues, low service level and insufficient quality of relevant practitioners. At the same time, using relevant technologies to develop college intelligent sports venues can also enrich the functional services of sports venues, so that teachers and students can have fun with education, strengthen their bodies and enhance their enthusiasm and enthusiasm for sports[30].

(2) The following issues should be noted in the development of intelligent sports venues in colleges and universities. Firstly, in the process of construction and development of intelligent sports venues in colleges and universities, the relevant software and hardware should adopt unified interface specification and technical specification. Secondly, we should view the smart sports venues correctly, neither hinder its development nor exaggerate its role. Third, pay attention to the relevant data and privacy security, privacy and security is the most important aspect of the development of the whole, if the lack of information security as an important basic guarantee, the operation and experience of intelligent venues will be greatly discounted. Fourth, make full use of the model of school-enterprise cooperation to solve the problem of funds and talents in the development of university wisdom venues.

(3) Need to follow certain principles. First of all, we should follow the principle of moderate development, we should not pursue high and mighty, and we should meet the needs of the moment. Secondly, we should follow the principle of sustainable development, we should have a long-term development plan, we need to consider the long-term development, we can't just look at the current interests. Thirdly, it should follow the principle of openness and sharing, which is conducive to the further excavation of the value of the data and the maximum effectiveness of the university's intelligent sports venues.

(4) It is necessary to find the right goal for development according to our own needs. First, to analyze the current problems on the ground and make solid improvements on the shortcomings. Second, establish an information management platform and a general platform framework, and then enrich and develop the contents within the framework. Again, develop intelligent functional services and facilities and equipment in order of priority. Finally, make effective use of funds and increase government-related investment to meet the needs of teachers and students as much as possible. Optimize the development path as follows. First, promote the relevant policies and systems of universities to guarantee. Second, strengthen the training and talent cultivation of relevant practitioners. Third, provide financial guarantee to change the investment structure. Fourth, improve infrastructure construction and establish information management platform. Fifth, renovate and upgrade the hardware facilities and enrich the functions of relevant venues. Sixth, focus on the experience of teachers and students, and improve the function of teachers and students' clients. Seventh, combine intelligent venues and student sports culture construction. Eighth, promote the opening and sharing of university venues to the outside world.

6.2. Research Recommendations

The state and universities should further support and encourage the construction of college wisdom stadiums, introduce some normative policies specifically for the development policy of

ISSN: 2710-0170

college stadiums, put forward the development mode of college wisdom stadiums in a targeted manner, and further increase the financial investment in the construction of college wisdom stadiums. The relevant leaders of the state, society and colleges and universities should change their mindset and improve their understanding of the current intelligent stadiums in colleges and universities. The wisdom of stadiums is a forward-looking development trend in the future, which can create great social value, and it is only by improving the mindset and understanding and laying out the intelligent stadiums in advance that they can lead the trend of the times and make great contributions to the development of society. The information management platform can realize data interchange and sharing between different colleges and universities in Ningbo, share resources, teachers and students can easily go to the sports venues of other colleges and universities to carry out relevant sports, which can realize the sharing and complementation of the advantageous site resources and resources with special fields of college sports venues. Establishing an effective and smooth feedback mechanism, the management of college stadiums can quickly accept the feedback from teachers and students, and timely adjust the operation mode and operation content of the stadiums through effective feedback, which is conducive to the continuous improvement of the service level of intelligent stadiums. Establish a scientific and effective long-term mechanism to track the construction and operation of college stadiums in real time, adjust the construction and operation contents in time, constantly update and upgrade the intelligent facilities, equipment and functional services in the smart stadiums, and keep pace with the development and the needs of teachers and students.

References

[1] Fu Zishuo, Chen Yuanxin. Experience and inspiration of foreign smart stadium construction [J]. Journal of Sports Culture, 2020 (10): 40-46.

[2] Chen Sijing. Comparative analysis of public stadium management models in China [D]. Beijing. Party School of the CPC Guangdong Provincial Committee, 2021.

[3] Li Jifeng. Interpretation of informationization, digitalization and intelligence of tourism scenic spots [J]. Journal of Luoyang Normal College, 2014, 33(02): 110-113.

[4] Hu Guangwei, Zhao Siyu, Yao Min, Liu Jianxia. On the construction of smart city clusters in China: form, architecture and path - taking Jiangsu smart city cluster as an example [J]. E-Government, 2021(04):2-15.

[5] Ju Huewen, Li Ning, Wang Xiaoran. Introduction to the theory of customer satisfaction [J]. Chinese and Foreign Enterprise Culture, 2012(12): 70-72.

[6] Tian Jianping. Research on the development of higher education institutions based on "customer satisfaction model" [J]. Education and Career, 2015 (25): 23-25.

[7] Wu Qian. Highway access service management system based on standardization theory and process method [J]. China Standardization, 2016 (15): 46.

[8] Zhang Zhen. Optimal design of prefabricated assembled concrete buildings based on standardization theory [J]. China Residential Facilities, 2020 (08): 42-43.

[9] Li Jifeng. Interpretation of informationization, digitalization and intelligence of tourism scenic spots [J]. Journal of Luoyang Normal College, 2014, 33(02): 110-113.

[10] Han Zhaozhu, Ma Wenjuan. A review of digital governance theory research [J]. Journal of Gansu Administrative College, 2016, 22(01): 23-35.

[11] Hao Hui. Smart governance: a study on social governance innovation in the context of big data [J]. Academic Theory, 2019 (10): 72-73.

[12] Li Jing. Analysis of the construction concept and application of intelligent sports stadium [J]. Computer Knowledge and Technology, 2019, 15(28): 272-274.

[13] Liu Xiaohua. Research on the development of intelligent sports in the era of big data and cloud computing [J]. Food Research and Development, 2020, 41(14): 245.

ISSN: 2710-0170

[14] Hu Guangwei, Zhao Siyu, Yao Min, Liu Jianxia. On the construction of smart city clusters in China: form, architecture and path - taking Jiangsu smart city cluster as an example [J]. E-Government, 2021(04):2-15.

[15] Feng Yan. The construction concept and application of intelligent sports stadium [J]. Modern Vocational Education, 2017 (35): 172.

[16] Zhang Ronglin, Zhang Liqiong. Information digitalization intelligence: a management perspective [J]. Small and medium-sized enterprise management and science and technology (mid-term journal), 2021 (12): 16-18.

[17] Li Jing. Intelligent research on the operation and management of sports stadiums in the perspective of intelligent sports [J]. Management Informatization, 2019, 22(19): 133-135.

[18] Wang Jun. The current situation, problems and ways to promote digital government governance in China [J]. Journal of Chongqing Three Gorges College, 2018, 34(06): 32-37.

[19] Zhu Mengyu, Huang Haiyan.Research on the application of 5G technology in the intelligent construction of sports stadiums [J]. Sports Scientific Research, 2020, 41(05): 2-9.

[20] Fu Dongdong, Ding Biao, Luan Yachao. Exploring the construction concept and application analysis of intelligent sports stadiums [J]. Intelligent Building, 2020 (02): 27-28.

[21] Yi Y, Chen WJ, Li GX. Research on the whole process engineering consulting mode of intelligent sports stadiums [J]. Construction Supervision, 2020 (S1): 42-44.

[22] Fu Gangqiang, Wei Xinmei, Liu Dongfeng. The basic characterization, application value and deepening path of artificial intelligence empowering the wisdom transformation of sports stadiums [J]. Research in Physical Education, 2021, 35(04): 20-28.

[23] Rong Yun. Research on the optimal allocation of stadium resources from the perspective of public sports services [J]. Journal of Guangzhou Institute of Physical Education, 2018, 38(05): 47-49.

[24] Liu Xunlei, Ge Jinyan. Comparative study on operation and management of domestic and foreign public stadiums and development countermeasures [J]. Contemporary Sports Science and Technology, 221, 11(19): 178-180.

[25] Dong Yi. Unbalanced supply and demand of public stadiums and the optimization path [J]. Hubei Sports Science and Technology, 2022, 41(01): 47-50.

[26] Fu Gangqiang. Research on intelligent operation mode of stadiums in the context of "smart Asian Games" [J]. Shandong Sports Science and Technology, 2020, 42(03).

[27] Li Ruijie. Theoretical and practical research on the components of intelligent sports in colleges and universities in the perspective of intelligent education [D]. Beijing Sport University, 2020.

[28] Li Ruijie. Theoretical and practical research on the components of intelligent sports in colleges and universities in the perspective of intelligent education [D]. Beijing Sport University, 2020.

[29] Nie Xin, Deng Winwei. Exploring the development and construction ideas of intelligent venues [J]. Contemporary Sports Technology,2020,10(30).

[30] Xu Wenhai. Discussion on the management mode of intelligent engineering of stadiums [J]. Intelligent Building and Urban Information,2004,6(45).