

# *Research on the Construction of Intelligent Service Mode for College Students' Physical Health from the Perspective of Intelligent Social Governance*

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**Abstract:** After the normalization of COVID-19, Chinese college students have shown obvious characteristics such as insufficient exercise and lack of awareness of exercise, leading to a continuous decline in the physical health of college students, which has become a concern of the whole society. The decline of college students' physical fitness is the result of many factors superimposed. The reasons are as follows: on the one hand, exam-oriented education puts more emphasis on intelligence than body, weakens the attention on students' physical fitness, and leads to the imperfect physical education mechanism and students' physical fitness management and monitoring system; On the other hand, the traditional physical education teaching mode of colleges and universities is deeply rooted in the lack of evaluation of students' physical exercise process, resulting in students' low sense of gain. In this regard, the Chinese government has issued a series of policies and measures in succession, and made strengthening youth physical exercise as the basic project of promoting national fitness, so as to enhance the physical quality of young students. In general, the current trend of physical decline of college students has not been completely reversed, overweight, obesity and lean ratio rises, cardiopulmonary endurance and weak strength and other problems are still prominent.

## **1. Introduction**

With the advent of the smart era, the integrated development of the new generation of smart technology represented by the Internet, big data and artificial intelligence and physical health promotion, the application of advanced information technology, sensor technology, computing and predictive technology in the process of physical health promotion of students, effectively make up for the shortcomings of testing and analysis in the process of physical health promotion of college students. It provides a path of intelligent development to strengthen students' participation in physical activity behavior, cultivate their awareness of physical activity, and satisfy their diversified physical fitness needs. In view of this, this project makes comprehensive use of the new generation of wisdom technology and the integration of physical and information infrastructure of physical and health in colleges to construct the intelligent service mode of physical and health of college students,

explore the new mode of intelligent development of physical and health of college students, and form a predictable, planned and judged new path of physical and health promotion of college students, in order to enhance the physical quality and physical health of college students in China's diversified development[1].With the rapid development of informatization and digitization, the construction of smart campus has become a powerful starting point to improve the intelligent level of campus social governance. In the process of promoting the construction of smart campus, the management method of physical fitness test of Chengdu University of Information Technology has formed the characteristics of focusing on high efficiency, promoting the innovation of physical fitness test mechanism of college students, focusing on the refinement of test methods, realizing the technological innovation of test management methods, and building the innovation of test mode based on integration. In addition, by integrating informatization and digitalization with intelligent hardware and smart management platform, it explores the overall layout of perfect and optimized test management method design, converging governance forces, implementing the people-oriented, clear governance objectives, adhering to local conditions and highlighting key points, so as to form an orderly, balanced and healthy smart campus "ecosphere" [2]. Combining with the existing achievements and practical problems in physical fitness test of college students, this paper makes a theoretical reference on how to develop physical fitness level in college physical education. The overall condition of students' physical health test is good, but the physical level of students is not optimistic and needs to be further improved. The students have good lung capacity, cardiovascular system and body flexibility, but their performance in middle and long-distance running is not ideal, and their lower limb strength is weak. It is expected that in a long period of time in the future, the lean and obesity rate of boys will have a further increase trend, and the low weight ratio of girls will also have a further increase, which is closely related to the current weight loss tide and the beauty of thin, which will become one of the main factors affecting the physical health of students. In the future, the research of physical hygiene and health care should be strengthened in physical education teaching.

## **2. Significance of Building College Students' Physical Health and Wisdom Service Mode**

### **2.1. Fit the Connotation of the Healthy Development of College Students in the New Era**

This gives a new connotation to the development of physical health of college students. Although the factors affecting college students' physical health are more complex, the lack of health awareness and physical exercise are still the main reasons for the decline of students' physical health level. Therefore, enhancing students' awareness of physical exercise and promoting students' physical exercise are important means to promote students' physical health. Based on this, this study makes full use of wisdom technology to build college students' physical health wisdom service system. Through the introduction of new wisdom ideas, the application of new wisdom technology and the formation of new wisdom mode, wisdom effect can be generated in the whole process of college students' physical exercise, the whole process of health management and the whole chain of health service, and wisdom value can be created.

### **2.2. Optimize the Implementation Path of the Integration of Physical Exercise in and out of Class for College Students in the New Era**

For a long time, there have been technical obstacles in organization and management such as difficult to share exercise information, difficult to connect content and difficult to track the process in the integration process of physical exercise for college students, which have seriously restricted the enthusiasm of students to participate in physical exercise. Therefore, comprehensive use of the

Internet, big data, artificial intelligence and virtual reality technology to explore a new model of future education and teaching, reconstruct the governance mechanism of intra-class physical education and extra-curricular physical exercise in colleges and universities, and form a mutually supportive and complementary development pattern in space and function. The purpose is to meet the exercise needs of students with different constitutions (overweight or thin, etc.) through the motor skills and physical exercise methods mastered by students in class [3] (Chen, 2019). The interactive effect formed by the integration of in-class and extra-class exercise will have a positive impact on students' exercise consciousness and behavior. Therefore, the construction of college students' physical health and wisdom service system provides technical support for the implementation of the integration path of physical exercise in and out of class.

### **2.3. Meet the Diversified Needs of College Students for Physical Exercise in the New Era**

It is a key step to cultivate students' awareness and behavior of physical exercise to meet the diversified demands of physical exercise. Physical health intelligent service model is based on the application of intelligent technology, combined with school physical education, sports training science, exercise physiology and exercise biochemistry and other theoretical systems, to provide accurate services for students to participate in physical exercise process display. Through the system (APP), students can timely understand the detailed data of their physical health, which is conducive to further matching the needs of students' physical exercise participation, including physical health needs, physical display needs, competitive ability improvement needs, etc. At the same time, the application of intelligent technology can also provide college students with more choices in the time and space of physical exercise. For example, the physical education teaching assistant system can record the whole process of physical education in real time, and students can watch the teaching process repeatedly according to the learning progress [4]. It can not only effectively solve the situation of students' exercise experience and consolidation in class, but also provide physical exercise guidance in line with their own situation according to the situation of students' extracurricular exercise, which is helpful to better meet the needs of college students personalized physical exercise, and promote the overall healthy growth of college students.

## **3. The Internal Logic of College Students' Physical Health Wisdom Service Mode**

### **3.1. Basic Process of Physical Health Intelligent Service Mode**

The basic process of college students' physical health wisdom service mode. The first step is to accurately perceive students' sports behavior and exercise data through real-time monitoring by smart sensors (such as wearable sensing devices, video surveillance devices, biochips, mobile phone sensors, etc.). The second step is information storage, transmission and analysis through modern information technology. The third step is to make a comprehensive perception and evaluation of students' physical exercise behavior and effect according to the analysis results, provide auxiliary and decision-making information for students in class physical education, extracurricular physical exercise, physical health management and other aspects, and formulate personalized physical health promotion programs. The fourth step is to provide decision-making programs and the implementation of the physical health promotion in colleges based on various practical problems of physical health and physical exercise needs, so as to achieve the purpose of scientific monitoring and management of college students' physical health.

### 3.2. Structure and Function of Smart Service Mode for Physical Health

The Health smart service model is composed of infrastructure layer, data support layer and application service layer (see Figure 1). The infrastructure layer realizes the information collection of the whole process of students' participation in physical exercise through various intelligent sensing terminal devices, including network communication, sensors, data services, camera equipment, servers, system software, etc., to provide infrastructure support for the normal operation of the smart service mode of physical health. The data support layer mainly carries out technical statistics and analysis of massive data to explore the regularity of data development. After processing and transformation, it will eventually become a production factor to improve the level of physical health, and a core element to build the smart service mode of physical health for college students [5]. The application service layer mainly focuses on the problems existing in the process of physical health promotion of college students, and provides students with physical health monitoring, in-class physical education assistance, extracurricular physical exercise guidance, physical health management and other application services, which is the final function embodiment of the whole process of physical health intelligent service mode technology form.

The main functions of integrating smart technology into physical health services mainly include exercise load monitoring, family exercise guidance, sports competition analysis, physical health management and so on. With the help of the service framework of intelligent sports, this article summarizes the main functions of the service mode of intelligent physique health for college students in our country from the perspective of intelligent sports into four levels: dynamic monitoring of physique health, auxiliary function of physical education in class, guiding function of extracurricular physical exercise, promoting function of physique health management.

(1) Dynamic monitoring function of physical health: Intelligent sensing and monitoring devices (such as motion sensing, biochip and wearable smart device technology) are applied to collect data of college students' physical data (such as heart rate, respiration, blood lactic acid, etc.), exercise behavior (such as exercise times, intensity, frequency, etc.) and physical quality (explosive power, flexibility, strength, endurance speed) [6]. The intelligent algorithm is used to dynamically evaluate the development of students' physical health, and accurately identify the vulnerable students. Teachers can take targeted physical exercise methods for disadvantaged students and students with good physical fitness to conduct personalized exercise intervention, enhance the awareness of participation in physical exercise of college students, strengthen their physical exercise behavior.

(2) Auxiliary functions of in-class physical education: Intelligent technology is so helpful in the digitization of visual sports space, the combination of real teaching and virtual teaching environment, the real-time recording and panoramic representation of the whole process of physical education [7]. At the same time, according to students' physical fitness data and movement identification (pictures, videos, postures), personal physical fitness assessment reports are generated to realize scientific analysis of students' technical movement characteristics and improve teaching quality. The integration of smart sports into physical education teaching not only changes the traditional infusing teaching method, but also enables students to obtain more real virtual environment experience of seeing, listening, touching and moving sensations. It also guides students to carry out collaborative and experiential teaching interaction, satisfies students' diversified demands for physical exercise, and provides quantitative data reference for physical education teachers to design in-class teaching and physical fitness analysis.

(3) Guiding function of extracurricular physical exercise: The lack of awareness of physical exercise and the limitation factors of extracurricular physical exercise are the main reasons for the lack of extracurricular physical exercise of college students. Stimulating the internal motivation of students to participate in physical exercise is an important intervention measure to improve the

physical health of college students. This paper intends to use artificial intelligence technology and intelligent wearable devices to broaden the feedback channels for college students to participate in extracurricular physical exercise, break through the technical barriers of traditional physical exercise management in process tracking, information sharing and physical management decision-making, and provide quantitative conditions for college students to participate in the process of physical exercise, such as monitoring, evaluation and management [8]. Wisdom technology is integrated into college students' extracurricular physical exercise system to stimulate students' enthusiasm to participate in physical exercise activities, substantially enhance the benefits of extracurricular exercise guidance, and provide students with sports risk assessment, physical health assessment, personalized exercise prescription, exercise intervention programs and other services.

(4) Promoting function of physical health management: From the perspective of relevance theory, social ecological environment will be an important factor affecting college students' physical exercise behavior. Therefore, in view of the physical health changes brought by college students' behavior habits and lifestyle, intelligent sensing technology and big data visualization platform are used to build a physical health management model integrating exercise monitoring, analysis and evaluation of physical conditions, exercise feedback and guidance [9]. It can connect in-class and extra-class exercise process, build interactive teaching mode inside and outside class, expand the time and space for students to exercise, form behavior tracking of college students' daily exercise, establish physical health management files, form a physical health warning mechanism, stimulate the intrinsic motivation of college students to participate in exercise, improve their exercise awareness and behavior, and encourage college students to exercise actively, participate in self-health management. Ultimately, it can improve the physical health level of college students from the root [10].

#### **4. Conclusion**

Intelligent application is an important means to promote the improvement of college students' physical health level. Based on the concept of smart sports, the integration of physical health promotion and the application system of the new generation of smart technology plays an important role in enhancing the physical quality of college students and improving their physical health level [11]. The purpose of building physique health wisdom service mode is to bring wisdom effect and create wisdom value to college students in the whole process of physique health monitoring, in-class physical education, extracurricular physical exercise, physique health promotion, etc., through the introduction of wisdom idea, application of wisdom technology and formation of wisdom mode, so as to meet the personalized and diversified physical exercise needs of Chinese college students. A predictable, planable, and judicious new pattern of promoting college students' physical health is formed, so as to provide theoretical and practical reference for the construction of intelligent paths to enhance the physical quality of college students and improve their physical health level.

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