Research Article

Multisensor Data Fusion System for Wushu Sanda Teaching in Higher Education Institutions

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Received 15 December 2021; Revised 26 January 2022; Accepted 1 March 2022; Published 12 March 2022

Academic Editor: Mohamed Elhoseny

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Classical data fusion methods can be roughly divided into two categories: one is based on random methods, such as weighted average, least squares, Kalman filtering, Bayesian estimation, DS evidence inference, and production rules; the other is based on artificial intelligence. Intelligent methods include fuzzy logic reasoning, artificial neural networks, and support vector machine methods. This paper introduces, analyzes, and summarizes the advantages and disadvantages of the above methods, as well as the level of use of these methods, and then introduces the current trend of data fusion technology toward the mixed development of multiple methods. This article is aimed at carrying out a research on the innovation of Wushu Sanda teaching mode in colleges and universities based on multisensor data fusion technology. This article puts forward the innovative theory of youth sports training in Sanda in the new era, combined with the current status of physical education in Chinese colleges and universities, and analyzes the practicality of the theory and the effect of system integration. This article accelerates reforms and collects data from four aspects: the policy system at the macro level, the integrated governance system at the meso level, the teacher service system at the micro level, and the digital industry system at the functional innovation level, and proposes innovative strategies for youth sports training and teaching in the new era. The results of the study show that people with 5.99 are more interested in the World Cup, accounting for the largest proportion, while the number of people who are interested in martial arts is the least, only 1.63. The innovative theory of youth sports training in Sanda in the new era improves the training effect of students by 60% compared with ordinary college Sanda training. It can to a large extent protect students from reluctant exercises that do not receive physical education in traditional teaching. Physiologically, it has unique advantages for the development of students. The teaching innovation model of this article can effectively solve the problems of physical education organization difficulty.

1. Introduction

The comprehensive development of the body and mind in College Wushu Sanda Teaching is still lagging behind; the main reason is that the connection between colleges and market economy is not close enough. Although some high-tech means have been used in college sports and fitness, the way is relatively single, the equipment is aging, and the degree of intelligence is not high. Most sports still adopt the traditional teaching mode and competition mode and lack the innovation of teaching mode in teaching and training.

Theint et al. believe that the foundation of youth sports training industry is dynamic and the management of human resources is insufficient. Although the development of youth sports training industry in China is still in the primary stage, there is a contradiction between the demand for large-scale youth sports training and the mechanism of government support, stadium facilities, teaching staff, political and social cooperation, or government enterprise cooperation; moreover, the basic systems such as hardware and software are highly dynamic, and it is difficult to form a relatively stable compound, high-quality, hierarchical technical personnel, or management team due to the lack of mandatory or
supportive mechanisms [1]. Serițan et al.’s research shows that China lacks preferential policies on venues and facilities for organizations engaged in youth sports training industry, and its idle and wasted resources or high fees make it difficult for teenagers to enjoy sports facilities [2]. Munteanu et al. pointed out that the resources of youth sports training industry are scattered and there is lack of governance capacity building. Under the background of increasing awareness of youth sports to promote health, youth sports training institutions mainly focus on off-campus sports skills training, sports event organization, and sports cultural exchange services [3]. Orique et al. believe that with the diversified development of youth sports reserve talent training, youth sports training institutions will gradually assume the social responsibility of discovering and transporting youth sports reserve talents in the form of cooperating with the government and social organizations or directly entering schools to provide services [4]. Fizeshi believes that pedagogy is the history of the formation of a science, and the current educational trend is still the content of teaching subjects in higher normal colleges; the characteristics of the educational process should follow the laws and principles, methods, and organizational forms [5].

Zou et al. pointed out that at present, there are few technical endowment contents in youth sports training industry, such as homogenization of skill training, strong replicability of curriculum contents, low industry access threshold, and lack of industry certification standards [6]. Shin et al. pointed out that as the service object of youth groups, the lack of policy system and leadership willingness of youth sports training institutions established by their schools hindered the purchase of sports public services and the development of extracurricular sports characteristic services [7]. Lan et al. believe that the resources of ordinary schools and public sports venues are not oriented to the youth sports training industry, and it is difficult for youth sports training institutions to get the support of the government and the market in terms of capital operation and investment system [8]. Zhang et al. pointed out that the discretization of resources leads to the phenomenon of “lack of competition with other industries” or “vicious competition within the industry” in the youth sports training industry [9]. The above research is based on the improvement of physical education curriculum itself. However, for a long time, it is affected by many factors, such as the low status of school physical education in the education system, the relatively closed competitive sports reserve talent system, and the booming sports industry. Therefore, the above research results have great practical obstacles for the application in colleges and universities.

This paper puts forward the new era of youth sports Sanda training teaching innovation theory, combined with the current situation of physical education in colleges and universities in China, and analyzes the practicability of the theory and the effect of system integration. In this paper, from the macro level of the policy system, meso level of the integrated governance system, micro level of the teacher service system, and function innovation level of the digital industry system, four aspects to speed up the reform of data collection, put forward the new era of a youth sports Sanda training teaching innovation strategy. This paper proposes a new and improved Kalman filter data fusion based on covariance fusion estimation and self-correcting-weighted observation Kalman filter method. Based on the problem that the coefficient is difficult to determine in the data fusion of this new improved Kalman filter, it is found that the determination of the coefficient is an optimization problem of finding the minimum value, and this coefficient is relatively small but due to the particle swarm algorithm and quantum particle swarm optimization is relatively easy to fall into the local minimum when solving optimization problems. This paper proposes a new improved quantum particle swarm optimization based on a quantum cross gate. Combined with practical problems, the traditional method of data fusion and the improved method in this paper are used to carry out simulation experiments.

2. Innovative Research Method of the College
Wushu Sanda Sports Teaching Model Based on Multisensor Data Fusion Technology

2.1. Multisensor Data Fusion Technology. Data fusion technology is to organically fuse the data from multiple sensors to one or more targets according to certain criteria and filter the fused data in order to obtain reliable information of the target. Data fusion can be regarded as the comprehensive perception and processing of information by the human brain. The function of each sensor is like the human ear, nose, eye, and other organs to judge external information. Then, the information is transmitted to the fusion center in order to better distinguish and process external information. In the process of data processing, it is necessary to divide multilayer and multilevel data processing to improve the comprehensive utilization of information. Data fusion methods usually have two levels of division, namely, high-level data and low-level data fusion. High-level data fusion includes situation assessment and threat estimation, while low-level data fusion includes target detection, target tracking, and identity estimation. Figure 1 shows the information processing model based on data sensors.

Among them, data association is one of the key technologies in the multisensor data fusion tracking system. Before data fusion, it is necessary to judge whether the observation information of each sensor comes from the same target. If it comes from the same target, data fusion is performed, and data association can also complete the target identification of multisensor observation information. Therefore, the performance of the data fusion system is closely related to the data association process. Because of its high availability and effectiveness, the distributed fusion structure has been widely used in many fields. The research on data association in this paper is also carried out on the basis of the distributed fusion structure. When the number of targets is small, there is no interference and clutter; the data association problem is relatively simple. When there are many targets, cross positions, clutter, and interference, the problem is more complicated. There are two main algorithms for distributed data
association. One is an algorithm based on statistical theory, including the weighting method, correction method, sequential method, related double-threshold method, nearest neighbor method, and K-nearest neighbor method. The second is an algorithm based on fuzzy mathematics. There are track correlation algorithms based on fuzzy comprehensive functions, fuzzy track correlation algorithms, gray track correlation algorithms, etc. This method is suitable for intersections or bifurcations in dense target environments. Figure 2 shows the multisensor transmission mode.

2.2. Problems in Sanda Teaching. The unreasonable structure of physical education and the low development efficiency of sports service industry have become the urgent problems to be solved. It is of great theoretical and practical significance to effectively promote the relevant research progress for the development of sports industry. Based on the contradiction between supply and demand of sports service industry, under the background of closely focusing on the upgrading of sports teaching mode, how to promote the development of sports service industry is discussed. From the perspective of internal governance, the dynamic mechanism, operation mechanism, and path mechanism of the development of sports service industry are discussed [10, 11]. On the basis of clarifying that the dynamic mechanism is the source factor of promoting the development of sports service industry, the operational mechanism is the process factor of promoting the development of sports service industry, and the path mechanism is the strategic factor of promoting the development of sports service industry, we should firmly grasp the logical relationship that the dynamic mechanism is the premise of the operational mechanism and the path mechanism is the guarantee and booster of the operational mechanism [12, 13]. Around the two aspects of sports teaching mode policy and sports teaching mode demand, this paper explores the dynamic factors of sports service industry development, explores the operation mechanism of sports service industry development from the interaction, integration, and innovation level of sports service industry and related industries, and explores the path mechanism of sports service industry development from policy guidance, technical support, and demand stimulation, so as to provide reference for the innovative development of sports service industry and provide important ideas [14].

Under the influence of the new crown pneumonia epidemic, people’s physical education model concepts have gradually changed, and the awareness of the physical education model of sports services has been significantly increased. This is an important part of the development of the sports service industry [15, 16]. Based on this, under the favorable background of upgrading the physical education model, it is particularly necessary to clarify the dynamic mechanism for promoting the development of the sports service industry. In order to promote the development of the sports service industry, the government has issued a series of related policies to encourage the development of the industry and promote the supply of the industry to meet the people’s sports teaching service needs. The formulation and implementation of related sports teaching policies have provided impetus for the effective development of the sports service industry, promoted the development of the sports teaching industry, and thus stimulated the vitality of the sports teaching area [17, 18]. The continuous formation of new sports service industries such as ice and snow resorts and various leisure and sports towns has further stimulated the expansion of training demand and also promoted the formulation and implementation of related policies [12, 19].

2.3. Sanda Training Competition Promotion Model. In terms of the development of fitness and leisure industry, in order to enrich the amateur life of athletes, all kinds of sports towns and leisure resorts have been built one after another, so that the diversified needs of athletes such as vacation, tourism, and health care have been met. In order to encourage and stimulate the masses to participate in sports training and formulate relevant preferential policies, it provides economic support for the development of sports service industry. In addition, we should give full play to the role of government financial support, build a platform for the development of sports service industry, and provide support
for the development of sports service industry by taking preferential measures and security policies [20]. Through the interpretation of the above policies, it is found that the effective formulation and implementation of policies can not only promote the growth of sports training but also provide power and guarantee for the sustainable development of sports service industry. In view of the current situation of policy formulation and implementation, this paper constructs a model that the formulation and implementation of relevant sports training policies are promoting China’s sports training and sports service industry into a high-speed development stage:

$$\omega_i = \begin{cases} \omega_i, & v_i \leq v_j, \\ \omega_i + \frac{v_i - v_h}{v_j - v_h} (\omega_i - \omega_h), & v_i \leq v_j \leq v_h, \\ \omega_h, & v_j \geq v_h. \end{cases}$$  \tag{1}$$

A physical education teaching area is the basis of the development of sports industry and also an important driving force for the development of sports service industry. To promote the rapid development of sports industry, we need to further stimulate the vitality of the sports teaching area. In recent years, China’s sports market has been constantly updated and enriched, and the form of residents’ participation in sports training is no longer single. It tends to be service-oriented training and experience-oriented training, which expands the development space of the sports teaching area. In addition, this model can stimulate the growth of athletes’ demand and further stimulate the vitality of regional development of physical education:

$$I_A = E_w + E_{nb} + E_t - Ic. \tag{2}$$

With the continuous improvement of sports marketization and commercialization, the sports teaching area is increasingly showing a standardized and orderly state. In terms of leisure and fitness industry, the leisure and fitness market is booming, which widens the leisure and fitness sports teaching area. In addition, the leisure and fitness industry relies on natural and human resources to develop characteristic sports and promote the regional innovation of physical education. In terms of venue service industry, according to the actual needs of athletes, provide high-quality sports services and products:

$$\psi = \sum_{x=1}^{\theta} V_x \left( \sum_{x=1}^{\theta} \frac{W_x}{\sum_{x=1}^{\theta} W_x} S_x \right), \tag{3}$$

$$E_v = \sum_{x=1}^{\theta} \sum_{h=1}^{\lambda} G_{jh} \left( p_{jh} + p_{j} s_{j} D_{jh} \right) (1 - D_{jh}). \tag{4}$$

In terms of the utilization rate of facilities, this model greatly improves the utilization rate of sports fitness facilities. Gymnasiums should regularly carry out fitness activities and provide sports guidance services to meet the sports service training needs of athletes. In the competition and performance industry, we should vigorously develop diversified sports events and actively create influential and high-quality brand professional events:

$$M = \frac{d_{jh} - P_{jh}}{d_{jh} + P_{jh}}. \tag{5}$$

In addition, enhance the communication of the event, and promote the event communication through the use of new media technology, in order to enhance the audience’s experience effect. The development and innovation of the
sports teaching area have provided a strong driving force for the development of sports service industry and achieved remarkable results in various fields such as leisure and fitness, venue service, and competition performance. However, compared with western developed countries, China’s sports service industry has the problems of insufficient training power and unbalanced industrial structure:

$$\theta(p, q) = \arctan \left( \frac{L(p, q + 1) - L(p, q - 1)}{L(p + 1, q) - L(p - 1, q)} \right)$$ \hspace{1cm} (6)

The final value of the objective function is determined by the average result of $K$ replicates, which is used as the output of the simulation model:

$$f(x) = \frac{1}{Nh} \sum_{i=1}^{N} \left( X_i - x \right). \hspace{1cm} (7)$$

The output of the simulation (i.e., the fitness values of all members of the subpopulation) is sent back to the master node to perform evolutionary operations (i.e., selection, crossover, and mutation) and finally select the regression value of the first generation:

$$P = \sigma t = \sqrt{\frac{1}{n} \sum_{i=1}^{n} (FI_{it} - FI_{gt})^2}, \hspace{1cm} (8)$$

$$h_t = \tanh (w_{xt} + u_x (\Theta h_{t-1}) + b_x). \hspace{1cm} (9)$$

In the venue service industry, with the increasing demand for a better life, people will devote more leisure time to physical exercise. In the process of sports participation, people’s demand for the content and quality of venue services continues to upgrade. For example, with the gradual improvement of people’s awareness of sports, people begin to change from fitness path mode to gym mode and from self-participation to seeking personal coach guidance. Therefore, the upgrading of training demand is an important driving force for the development of venue service industry.

2.4. Preprocessing Process of Multisensor Data Fusion Technology. When using ultrasonic sensors for robot navigation, there is often such a problem: because the sensor data is noisy, that is, the sensor was 3 meters away from the obstacle during the first measurement, but it was 2.9 meters away from the obstacle during the second measurement. It is obviously unreasonable to mark the positions of 2.9 meters and 3 meters away from the obstacle during the second measurement. It is obviously unreasonable to mark the positions of 2.9 meters and 3 meters with obstacles. In order to better solve this problem, we introduce the method of occupying the grid map.

For a place on a large-scale map, it either has obstacles or no obstacles, so we use $f(x = 1)$ to indicate that there is no obstacle and $f(x = 0)$ to indicate that there is an obstacle. Obviously, $f(x = 0) + f(x = 1) = 1$. At the same time, in order to describe the state of the point more conveniently, we introduce the ratio of the two:

$$\text{odd}(x) = \frac{f(x = 1)}{f(x = 0)} \hspace{1cm} (10)$$

Assuming that a new point is measured at this time, we need to update the original state:

$$\text{odd}(x|g) = \frac{f(x = 1|g)}{f(x = 0|g)} \hspace{1cm} (11)$$

According to the Bayesian formula,

$$f(x = 0) = \frac{f(y|x = 0) f(x = 0)}{f(g)}, \hspace{1cm} (12)$$

$$f(x = 1|g) = \frac{f(y|x = 1) f(x = 1)}{f(g)} \hspace{1cm} (13)$$

Bring in the original formula to get

$$\text{odd}(xg) = \frac{f(y|x = 1) f(x = 1)}{f(y|x = 0) f(x = 0)} \hspace{1cm} (14)$$

In order to simplify the calculation, the logarithm of the above formula can be obtained:

$$\log \text{odd}(x|g) = \log \frac{f(y|x = 1)}{f(y|x = 0)} + \log \text{odd}(x). \hspace{1cm} (15)$$

At this time, we have established a model $\log f(g = 0|x = 1)/f(g = 0|x = 0)$ of the measured value, which is denoted as state. The model contains two situations:

$$\text{free} = \log \frac{f(g = 0|x = 1)}{f(g = 0|x = 0)} \hspace{1cm} (16)$$

$$\text{free} = \log \frac{f(g = 1|x = 1)}{f(g = 1|x = 0)} \hspace{1cm} (16)$$

At this time, the state of position $x$ is $\text{odd}(x)$, denoted as $X$, and the rule for updating the state is simplified as follows:

$$X^+ = X^- + \text{state}. \hspace{1cm} (17)$$

In the above formula, $X^+$ and $X^-$, respectively, represent the state of $X$ before and after the measurement value is updated.

When there is no measurement, the initial state of point $x$ is

$$X_{init} = \log \text{odd}(x) = \log \frac{f(x = 1)}{f(x = 0)} = \log \frac{0.5}{0.5} = 0. \hspace{1cm} (18)$$

After the measurement value is updated, if the status value of a point is larger, the point is easier to be judged as
an obstacle, so a status grid map is established. Through appropriate scheduling and application of each sense and their measurement information, the redundant and complementary information of each sense in time and space is appropriately combined according to comprehensive judgment, so as to obtain a consistent reflection of the observed object or state or judgment.

Outliers are referred to as outliers for short, which refer to a small number of numerical points that seriously deviate from the trend of most values in a combination of observed values. Outliers have a huge impact on data analysis. In actual engineering applications, if they cannot be effectively detected and removed, they will have a huge impact on the judgment result and waste valuable frequency band resources. Therefore, before performing multisensor fusion, first eliminate the outliers in the above-mentioned sensors. Figure 3 shows the research of multisensor data fusion technology. This paper introduces the method of covariance fusion estimation and the method of self-correction-weighted observation Kalman filter fusion and then analyzes this filter fusion method to obtain a modified Kalman filter data fusion method based on covariance. And this method has been verified by simulation experiments.

3. Innovative Design of Sanda Teaching Mode

3.1. Innovative Mode of Physical Education. This paper puts forward the new era of youth sports Sanda training teaching innovation theory, combined with the current situation of physical education in colleges and universities in China, and analyzes the practicability of the theory and the effect of system integration.

3.2. Steps. In this paper, from the macro level of the policy system, meso level of the integrated governance system, micro level of the teacher service system, and function innovation level of the digital industry system, four aspects to speed up the reform of data collection, put forward the new era of the youth sports Sanda training teaching innovation strategy.

In the face of the new era of industrial economic transformation, national sports strategy, social awareness and physical and mental development needs, and other policy opportunities, this paper believes that China’s youth sports training industry in industrial integration and innovation, organizational systematization, service industrialization, and participation diversification shows good development momentum. However, for a long time, influenced by many factors, such as the low status of school physical education in the education system, the relatively closed reserve talent system of competitive sports, and the booming sports industry, there are a series of problems in China’s youth sports training industry, such as the imbalance between supply and demand, the shortage of venues and facility resources, the lack of professional guidance team, the lack of market supervision and management, and the lack of an industry access mechanism. Moreover, due to the fact that the macro policy of service economy and related policies of sports service industry are gradually implemented during the 13th Five-Year Plan period, coupled with the strong technicality of youth sports training, the slow standardization construction, and the lagging of value-added mining in culture and other industries, the industrial advantages, industrial clusters, and industrial chain of youth sports training have not yet been formed. The demand for sports training is the motivation for people to participate in sports training, and the upgrading of sports training is an important performance of the development of sports industry. Under the influence of novel coronavirus pneumonia, people’s sports training needs are constantly upgraded, training concepts are gradually updated, and from the satisfaction of weight injection 5to the pursuit of quality improvement, they gradually tend to individualized and diversified service-oriented training. Specifically speaking, the high correlation and interaction of the industry are the prerequisites for the integrated development of sports service industry and related industries.

This paper puts forward the new era of young people’s sports Sanda training teaching innovation theory for young people’s sports training industry to play a role in promoting physical and mental health, cultivating reserve talents and supporting industrial development.

4. Innovative Model of Wushu Sanda Teaching Based on Multisensor Data Fusion Technology

As shown in Figure 4, according to the survey of the National Youth Sports winter and summer camp in 2020, 71.37% of the event organizers obtain the venue facility resources in the form of leasing or cooperation (P < 0.05), the data result is statistically significant. It can be seen that the hardware facilities of most of the youth sports training industrial organizations in China are not fixed assets, which leads to high operating costs and strong organizational liquidity.

As shown in Table 1, the marginalization of physical education and other factors, as well as the lack of compulsory measures such as test baton, make young people’s willingness to participate in sports training, competitions, cultural exchanges, and other activities outside school more casual, bring difficulties to the survival of young people’s sports training industry organizations, and also cause serious difficulties to their operators in terms of continuing education and training, basic security benefits, career development space, etc.

As shown in Figure 5, under the background of training upgrading, the sports training awareness and training needs of Chinese athletes are constantly upgrading, gradually changing from “physical-type” training to “experience-type” training. In terms of leisure fitness industry, with the promotion of leisure fitness industry, people’s concept of leisure fitness training has gradually changed from a single sports training mode to a “sports +tourism” training mode and gradually changed from participating in fitness running, cycling, and other leisure sports to extreme sports, water sports, and other recreational and experiential sports.
As shown in Table 2, the output results of the Sanda training competition promotion model show that the innovative teaching theory of youth sports Sanda training in the new era improves the training effect of students by 60% compared with the ordinary college Sanda course training, which can to a large extent help the traditional teaching students not accept the physical education and has unique advantages in psychological and physiological development of students. For some athletes, in the process of sports training, regional natural, human, and other resource factors have an important impact on the demand of sports service training, especially in minority areas; athletes tend to choose Wushu and other traditional sports. In the competition and performance industry, with the continuous acceleration of competition supply and the gradual rise of diversified sports events, people’s training mode for sports events has
gradually changed from “watching experience” mode to “participating experience” mode. With the upgrading of people’s demand for experience training, people gradually tend to choose the training of NBA, World Cup, and other brand sports events.

As shown in Figure 6, with the continuous upgrading of training mode, people’s demand for leisure and entertainment, social interaction, and other aspects is rising, which has led to the development of sports tourism; with the gradual increase in the number of the domestic elderly population, some elderly people’s demand for physical fitness, self-cultivation, and other aspects is rising, which has led to the development of sports and health industry. In addition, the integration trend of sports service industry and high-tech, education and training, culture, security services, and other industries is gradually accelerating. As the above industries are highly related to sports service industry, they continuously realize the interaction and sharing of resources with sports service industry in terms of platform, market, and carrier, so as to improve the mutual utilization efficiency of resources. For the sports industry, the strong pull of diversified and compound market demands, the large-scale intervention of capital inside and outside the industry, and the strong penetration of information technology all herald the arrival of an era of integration of the sports industry in a modern sense: social, cultural, environmental, and other fields of high compatibility and benign interaction.

Table 1: Factors such as marginalization of physical education and lack of examination command.

| Item      | Treatment | Profession | Experiential | Physical type | Martial arts |
|-----------|-----------|------------|--------------|---------------|--------------|
| Training  | 2.55      | 1.49       | 1.24         | 2.76          | 3.3          |
| Competition | 5.39     | 4.21       | 4.94         | 2.35          | 2.4          |
| Cultural exchange | 2.47     | 4.52       | 4.06         | 5.81          | 2.68         |
| Venue     | 2.06      | 3.19       | 1.64         | 4.03          | 1.58         |
| Facility  | 2.52      | 6.72       | 1.69         | 3.31          | 5.71         |
| Resources | 1.63      | 6.71       | 4.29         | 2.94          | 5.95         |

Table 2: Sanda training event promotion model.

| Item      | Facility | Resources | Treatment | Profession | Experiential | Physical type |
|-----------|----------|-----------|-----------|------------|--------------|---------------|
| Martial arts | 1.63     | 0.35      | 0.02      | 0.66       | 0.9          | 0.53          |
| NBA       | 1.78     | 3.23      | 2.79      | 3.91       | 2            | 2.35          |
| World Cup | 5.99     | 3.27      | 5.11      | 3.43       | 5.72         | 2.44          |
| Training  | 4.44     | 3.28      | 1.75      | 5.66       | 2.17         | 4.36          |
| Culture   | 4.67     | 3.63      | 3.94      | 1.3        | 3.31         | 3.62          |
5. Conclusions

Since entering the new era, China’s youth sports training industry has developed rapidly under the development situation of government guidance, market guidance, and extensive social participation and has become a breakthrough for the transformation of national sports industry from sports goods manufacturing industry to sports service industry. From the perspective of service industry, China’s youth sports training industry presents a diversified development trend of organization construction and market demand and forms an integrated industrial chain of organization, venue, curriculum, service, and equipment, which highlights the development characteristics of sports service industry integrating health, education, and culture. However, there are also some practical problems, such as the lack of governance policies caused by the diversification of industrial organizations, the lack of governance human resources caused by the dynamic industrial foundation, and the lack of governance capacity building caused by the scattered industrial resources.

In this paper, from the new era of youth sports Sanda training industry, put forward a systematic, linkage, feasible governance strategy, to promote China’s youth sports training industry format innovation, coordinated governance, healthy development, regional opening, and resource sharing. From the perspective of youth sports, we need to construct the supply side reform of youth sports with multiple subjects of government, society, and market under the guidance of school and focus on the construction of different types of youth sports organizations, different types of sports, different levels of youth sports activities, etc., so as to build a modern sports governance system with youth physical and mental health as the main body.

The new era of youth sports Sanda training and teaching innovation theory to promote the development of youth sports events, especially through the participation of social forces to make up for the lack of government supply, and to consolidate the foundation of various types of youth sports organizations. In order to meet the diversified needs of teenagers, the government should take basic physical education and public services as the main body of teenagers’ sports activities. Although the improved quantum particle swarm optimization algorithm proposed in this paper can better avoid falling into the local optimum problem, the number of iterations is obviously more than that of the classical swarm intelligence algorithm. That is to say, the article sacrifices the efficiency of the algorithm to achieve a better optimization effect. There are already many improvement methods based on swarm intelligence algorithms. The next step is to combine other methods to find a skill that avoids effectively falling into the local optimum and has high efficiency.

Data Availability

No data were used to support this study.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

Acknowledgments

This work was supported by the Foundation of Ph.D. Scientific Research of Neijiang Normal University under Grant 18B19 and the Sichuan Applied Psychology Research Center of Chengdu Medical College Funded Projects under Grant CSXL-21103.

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