Review Article

Review on Intelligent Governance of Physical Fitness of College Students under the Background of Big Data

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The advent of the era of big data has promoted the reform of sports governance, and intelligent governance is becoming a strategic choice and a new trend to promote the physical fitness development of college students. Based on the profound analysis of the current situation of college students’ physical fitness, this study examines the great value of big data for the intelligent governance of physical fitness, and further constructs the model to achieve intelligent governance of college students’ physical fitness. The study also provides specific strategies to promote this process. According to the study, although the current situation of college students’ physical fitness is still not optimistic, data-driven intelligent governance of physical fitness provides a new solution to a personalized, refined, and diversified way of governance. By creating an intelligent governance concept with data thinking, building an intelligent governance platform supported by data, and by such measures as improving the data literacy of physical education teachers in colleges and universities and upgrading stadiums with intelligent techniques, the study seeks to break through the bottleneck of college students’ physical fitness governance and open up a new path to realize the effective governance of college students’ physical fitness.

1. Introduction

Physical fitness is the foundation of all physical activities [1]. As an important force in the construction and promotion of social progress, college students’ physical fitness has a direct impact on China’s socialist modernization and the great rejuvenation of the Chinese nation. However, under the dual pressure of study and employment, the physical fitness of college students is constantly declining and the trend has not been effectively contained under the dispersion effect of responsibility, and some indicators are even at a low level for a long time [2, 3]. In order to enhance the physical fitness of college students, governments at all levels have issued a series of policies and measures (Table 1). Although these policies and measures have improved their physical fitness to a certain degree, they have not achieved much effect, and the physical fitness indexes of some students are still declining. Consequently, it is essential to explore an effective governance model for college students’ physical fitness in accordance with the national conditions of our country.

With the rapid development of the Internet and information industry, big data resources and information resources are increasing exponentially. As a modern information technology that explores new knowledge, creates new value, and promotes new momentum [4, 5], big data not only renders new meaning and value to many basic data [6], but also provides strong technical support for the intelligent governance of college students’ physical fitness. In fact, countries around the world have already noticed the important value of big data in realizing intelligent social governance and incorporated it into their national development strategies. For example, the white paper “Big Data: Seize Opportunities and Protect Values” issued by the United States in 2014 [7], the “Dynamic ICT” strategy launched by Japan in 2012 [8], and the “Outline for Promoting Big Data Development” issued by China in 2015 [9].
The practice of these countries has contributed to the development of big data technology as a way of governance. On this basis, the combination of the big data technology and college students’ physical fitness, the comprehensive coverage of the big data technology and its service object, the accuracy of the supplying content, and the intelligent transformation of the governance process can empower the intelligent governance of college students’ physical fitness. They can further break through the bottleneck of the traditional governance and provides a new path to reverse the decline of the physical fitness of college students. [4].

2. Concept of Regulation

The word “physical fitness” began to appear frequently in various newspapers and literature in China in the middle and late 1980s. In fact, physical fitness really came into the public’s view in 1994, after the National Sports Commission conducted a physical fitness test for football players (it is stipulated that athletes must pass the physical fitness test before they can participate in professional leagues). At this stage, the discussion of fitness becomes very intensive. Up to now, the related research on physical fitness has been very rich, and the discussion on the concept of physical fitness has never stopped. In 2004, the editorial department of the JOURNAL of PLA Physical Education Institute launched a special discussion on the concept of “physical fitness”. However, in different periods, different experts define physical fitness differently from different perspectives. From the perspective of sports training, for example, Tian Maijui believed that physical strength is the basic athletic ability of athletes and an important part of athletic ability. For example, Yang Shiyong also clearly pointed out in his research that physical strength includes physical form, physical function, sports quality and other elements, and is an important part of athletes’ competitive ability. It is aiming to improve athletes’ competitive ability and obtain excellent competition results. Of course, some scholars have a different view that physical fitness is not only for improving competitive ability but also for social sports and mass fitness in a broad sense. The adaptation of sports training and sports competition is the advanced adaptation of physical fitness.

Through sorting out the existing concepts, it is found that the current academic understanding of physical fitness gradually falls into the following points: (1) Component elements. It includes three parts: body shape, body function, and sports quality. Body shape and function are the material basis of physical fitness, while sports quality is the external performance of physical fitness, including strength, speed, endurance, flexibility, and agility. (2) Approach to achieving: it comes in two ways: nature and nurture. In the history of Chinese characters, “neng” was originally derived from “xiong”. The pictographs on oracle bone inscriptions also highlight some characteristics of “xiong”, such as big mouth, sharp teeth, and claws. Physical strength and the ability to adapt to the jungle are both inherited and acquired. (3) Functional characteristics: although physical fitness originates from competition, it also applies to social sports, mass fitness, and school sports. Physical strength not only serves for competitive performance but also provides the necessary support for ordinary people to complete basic work, life, and study.

Based on the above factors, physical fitness is the basic motor ability of the human body to participate in physical activities on the basis of congenital inheritance and acquired, including three parts: body shape, body function, and athletic quality. Body shape and function are the physical basis of physical strength. Athletic quality is not only the external performance of physical strength but also the core of physical strength, showing strength, speed, endurance, flexibility and agility, and other qualities. This concept does not specifically refer to athletes, and of course, it does not deliberately highlight the function of physical fitness.
fitness serving competitive sports, so it is a universal concept.

3. Physical Fitness Status of College Students in the Era of Big Data

In order to understand the current situation of college students’ physical fitness, 64,406 college students (36,348 males and 28058 females) from seven ordinary colleges and universities were randomly selected as test objects. After grouping by gender, the study measured each index of physical fitness, and the measured data were statistically analyzed. Specific methods are as follows:

Test content: Physical fitness is the ability of any basic sport manifested by speed, strength, flexibility, coordination, endurance, agility, and other qualities [10]. Therefore, indicators that can reflect the quality of various sports are selected for measurement, including 50 m race, 800/1000 m race, trunk bending forward, standing long jump, sit-ups, and other specific indicators.

Equipment: seat forward bend tester, tape measure, stopwatch, etc., the equipment is the national physical fitness monitoring equipment designated by the General Administration of Sport of China.

Standard for evaluation: The grading standard is based on the general textbook "National Standards for Students’ Physical Health" [11, 12].

Statistical software: EXCEL and SPSS17.0 software are used for statistical analysis of the measured specific indicators.

3.1 Results and Analysis of Speed Quality Assessment. The 50-meter race can reflect the speed quality of college students. The measurement results of the 50-meter race of college students show that the excellent and good rates of female students from freshman to senior are 15.36%, 16.9%, 6.69%, and 2.96% respectively (Table 2). The excellent and good rates of male freshmen to seniors are 28.75%, 28.70%, 24.70%, and 12.5%, respectively (Table 3). As can be seen from the scatter chart, the grades of male and female students show the same trend. The grades of freshmen and sophomores are stable, while the grades of juniors are slightly better than the first two grades, with 0.1 seconds faster, and the senior grade is at the worst level (Figure 1). In terms of the average percentage of the grade table, the overall performance of boys is better than girls. The variance test results based on senior grade show that there are significant differences between senior grade and the other three grades ($P < 0.05$). As can be seen from the scatter chart, scores between boys and girls reflect the same trend. The data of the first three grades show a steady increase, while the senior grade is at the worst level, and the performance of boys is more rapid and stable (Figure 2). From the average grade table, the proportion of girls above average shows an increasing trend of 4.85%, while the proportion of boys shows a decreasing trend of 6.72%.

3.2 Explosive Force Assessment Results and Analysis. Standing long jump can reflect the explosive force of college students. The results show that the excellent and good rates of female students from freshman to senior are 24.28%, 26.78%, 36.95%, and 19.70%, respectively (Table 4). The excellent and good rates of male freshmen to seniors are 20.21%, 20.79%, 17.27%, and 11.81%, respectively (Table 5). The variance test results based on senior grade show that there are significant differences between senior grade and the other three grades ($P < 0.05$). As can be seen from the scatter chart, scores between boys and girls reflect the same trend. The data of the first three grades show a steady increase, while the senior grade is at the worst level, and the performance of boys is more rapid and stable (Figure 2). From the average grade table, the proportion of girls above average shows an increasing trend of 4.85%, while the proportion of boys shows a decreasing trend of 6.72%

3.3 Flexibility Assessment Results and Analysis. Trunk forward bending can reflect the flexibility of college students. According to the results of trunk forward bending, the excellent and good rate of female students from freshmen to seniors are 38.07%, 41.94%, 32.06%, and 32.66%, respectively (Table 6). The excellent and good rates of male freshmen to seniors are 19.75%, 25.44%, 18.85%, and 14.96%, respectively (Table 7). The variance test results based on senior grade show that there are significant differences between senior grade and the other three grades ($P < 0.05$). As can be seen from the graph, female students’ scores showed a wavy
trend of first increase and then decrease, with the best performance in sophomore and the worst in junior, with a maximum gap of 0.8. Male students' scores are more stable than female students, with a smaller fluctuation range and a maximum gap of 0.4. In addition, female students' scores are generally higher than that of male students (Figure 3). In terms of grade ratio, boys' performance is lower than that of girls. Only two grades of boys are more than 50%, while the proportion of girls is more than 50% in all four grades.

3.4. Endurance Assessment Results and Analysis. The 1000-meter race can reflect the endurance of college boys, and the 800-meter race can reflect the endurance of girls. According to the results of 800m running for girls, the excellent and good rates from freshmen to seniors are 15.54%, 17.3%, 26.73%, and 10.54%, respectively (Table 8). The results of 1000 m running for boys show that the excellent and good rates of male freshmen to seniors are 13.54%, 10.43%, 11.76%, and 5.32%, respectively (Table 9). The variance test results based on senior grade show that there are significant differences between senior grade and the other three grades ($P < 0.05$). The biggest gap between boys' and girls' scores is 12 seconds, and boys' scores is a wavy change, while girls' is a “U” shape change. Girls' scores in the first three grades are better in high grades than in low grades, and the worst in both boys and girls is in senior grades (Figure 4). There is little difference in the mean of the grade table. The proportion of female students and male students is about 55% and 56%, respectively.

3.5. Strength Assessment Results and Analysis. Sit-ups can reflect the strength of college girls, and pull-ups can reflect the strength of college boys. The results of female students show that the excellent and good rates from freshman to senior are 5.46%, 6.38%, 7.80%, and 4.66%, respectively (Table 10). The results of male students show that the excellent and good rates of male freshmen to seniors are 5.62%, 6.86%, 2.60%, and 2.84%, respectively (Table 11). The variance test results based on senior grade show that there are significant differences between senior grade and the other three grades ($P < 0.05$). As can be seen from the graph, the
average score of sit-ups of girls is relatively stable from freshman year to junior year, with a gap of about 1, while the score of senior year is the worst, with a maximum gap of 3 (Figure 5). The grade with the best average pull-up performance of male students is sophomore, showing an inverted U-shape trend, while the grade with the worst grade is senior, with the largest gap of 2.1. In terms of average percentage, the first three grades show a slowly rising trend, and the senior grade is lower than the first three grades, with a decrease of 7.69% (Figure 6). In terms of the average percentage, the four grades show an overall downward trend, decreasing by 9.4%.

To sum up, the excellent and good rate of college students’ physical quality is still at a low level, and each indicator shows a trend of gradual decline with the increase in grades. The decline in endurance and strength is more obvious. There are various reasons including both subjective and objective factors. However, the lack of effective governance measures that keep up with the times is undoubtedly one of the important reasons for the continuous decline of college students’ physical fitness. For a long time, due to the lack of data collection, analysis, storage, and exploration, the intelligent governance of college students’ physical fitness is unable to clarify the core root of their problems correctly, which leads to the passive governance concept of “treat the symptoms rather than getting to the root of the problem” and the result is not ideal [5,13]. The arrival of the era of big data not only provides important technical support to realize the diversification, refinement, and intelligent governance of college students’ physical fitness but also provides effective solutions for improving college students’ physical fitness.

4. Value Review of the Intelligent Governance of College Students’ Physical Fitness in the Context of Big Data

4.1. Big Data Can Ensure the Scientific Nature of Governance Decisions. Decision-making is about collecting, transmitting, processing, and outputting data and information. Accurate data is the basis for decision-making. The traditional data collection methods and quantities of college students’ physical fitness are very limited. Simple statistical analysis that only reflects the physical status of college students in a certain period. It is unable to give full play to the predictive value of data and it cannot serve as the scientific basis to formulate policies that enhance the physical fitness of college students. Physical fitness data of college
students are changing all the time, so how to use these data efficiently requires the comprehensive collection and in-depth exploration of physical fitness data, and it is important to enhance the real-time, consistency and integrity of physical fitness data [5]. Big data is based on historical data, real-time data, associated data, and other data resources to clarify the feasibility, profitability, and risk of different alternatives. A big data analysis model is used to simulate the cause of events, development trends, decision results and other event tracks, and the predicted simulation results are used as the reference for decision-making, so as to make the formulation of policies more scientific. For example, there exists a controversy on NBA courts as to whether it is better to shoot the three-point shot or the two-point shot. Because in the era without data support, most decisions are made based on experience and lack of scientific basis. When the data was introduced and analyzed, it was found that the benefit of a 3-point shot was greater than the benefit of 2-point shot. With the support of data, these decisions become more scientific, so it can directly cover the training, competition every link. As a result, offensive zones throughout the NBA are now expanding beyond the three-point line.

4.2. Big Data Can Ensure the Accuracy of Governance Information. In the precise governance of college students’ physical fitness, it is necessary to pay more attention to the vulnerable groups and college students with seriously declining physical fitness indicators. The key is to accurately identify the object of attention. However, as the traditional technology is limited by time and labor cost, so it is very difficult to identify. Through real-time record, analysis, and application of the physical fitness level, behaviors, emotions, cognition, living habits, and physiological changes of individuals, it is plausible for big data to find the root of the problem accurately, discover the rule of the change of things, so as to improve the pertinence of intervention, and then achieve governance. Big data technology points the direction for administrators to accurately capture the key points and difficulties in the work to promote college students’ physical fitness. In this way, administrators can analyze from a more comprehensive, objective, and specific perspective, so that their work will not be stuck in “empiricism” [5]. It can be said that big data provides strong technical support for the accurate identification and governance of college students’

### Table 8: Girls’ 800-meter race scores and grade ratio.

<table>
<thead>
<tr>
<th>Level</th>
<th>Grade</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>Four</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td></td>
<td>289</td>
<td>483</td>
<td>221</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>3.46%</td>
<td>4.49%</td>
<td>5.87%</td>
<td>2.23%</td>
</tr>
<tr>
<td>Good</td>
<td></td>
<td>1008</td>
<td>1348</td>
<td>786</td>
<td>432</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>12.08%</td>
<td>12.54%</td>
<td>20.86%</td>
<td>8.31%</td>
</tr>
<tr>
<td>Pass</td>
<td></td>
<td>6210</td>
<td>7954</td>
<td>2571</td>
<td>4049</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>74.39%</td>
<td>74.03%</td>
<td>68.23%</td>
<td>77.93%</td>
</tr>
<tr>
<td>Fail</td>
<td></td>
<td>841</td>
<td>961</td>
<td>190</td>
<td>599</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>10.07%</td>
<td>8.94%</td>
<td>5.04%</td>
<td>11.53%</td>
</tr>
</tbody>
</table>

**u1**: 0.00056  **u2**: 0.00000  **u3**: 0.00006

### Table 9: Boys’ 1000-meter race scores and grade ratio.

<table>
<thead>
<tr>
<th>Level</th>
<th>Grade</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>Four</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td></td>
<td>322</td>
<td>299</td>
<td>111</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>2.81%</td>
<td>2.28%</td>
<td>2.22%</td>
<td>0.80%</td>
</tr>
<tr>
<td>Good</td>
<td></td>
<td>1230</td>
<td>1071</td>
<td>477</td>
<td>305</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>10.73%</td>
<td>8.15%</td>
<td>9.54%</td>
<td>4.52%</td>
</tr>
<tr>
<td>Pass</td>
<td></td>
<td>8067</td>
<td>9653</td>
<td>3460</td>
<td>4188</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>70.38%</td>
<td>73.51%</td>
<td>69.17%</td>
<td>62.01%</td>
</tr>
<tr>
<td>Fail</td>
<td></td>
<td>1843</td>
<td>2109</td>
<td>954</td>
<td>2207</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>16.08%</td>
<td>16.06%</td>
<td>19.07%</td>
<td>32.67%</td>
</tr>
</tbody>
</table>

**u1**: 0.00000  **u2**: 0.00000  **u3**: 0.00000

![Figure 3: The result change curve of trunk forward bending between boys and girls.](image-url)
physical fitness. Such as the “magic note” during Germany’s penalty shootout in the 2006 World Cup quarterfinal. Through the analysis, statistics, and judgment of 13,000 point data, at that time, Professor Bushman led 40 college students at the Physical Education Institute in Cologne to create the note. The computer they used is still in a football museum in Cologne, Germany. In the end, they accurately predicted who would take the penalty and how, and won the shootout. Eight years later, the same piece of paper appeared in the hands of Argentina goalkeeper Romero. It was also the same accurate judgment, which in turn helped Argentina through to the final on penalties. This is the embodiment of the precision advantage of big data.

4.3. Big Data Can Ensure the Controllability of the Governance Process. Different college students have different internal and external characteristics, such as gender, age, physiology, psychology, heredity, personality, and growth environment. The key issue of governance is how to provide personalized governance services in accordance with the different characteristics of college students. Through big data technology, the governance of college students’ physical fitness can vary from person to person, progress timely and innovate according to the current situation. Targeted quantitative regulation and control allow the entire governance to work under governance decisions. With the help of big data technology, the traditional “top-down” governance path is transformed into an intelligent path that is "bottom-up". In this way, the needs of college students can be fully expressed and satisfied to the maximum, which is the inevitable requirement and trend of the times of "student-based" intelligent governance. The data exploration technology can find the group characteristics of the evolution of college students’ physical fitness and the general rule of effective governance, and finally, realize the new governance pattern of data sharing and multi-party collaborative participation. Through multi-dimensional analysis of effective data, the controllability of the governance process is guaranteed according to the real situations and demands of college students.

4.4. Big Data Can Ensure the Timeliness to Process Governance Information. The data on college students’ physical fitness is produced very quickly, which reflects the real-time situation of their physical fitness. For big data storage platforms, data storage requires a certain cost. Generally, only the recent data can be saved, and it would cost too much to save all the
historical data. In this case, the processing speed of the big data storage platform is very important. In order to save costs and relieve storage pressure, the big data platform needs to analyze data in a timely manner. The real-time analysis capability of the big data platform makes it likely to process information about college students’ physical fitness. Every college student produces a large number of physical fitness data every day, and these physical fitness data are constantly changing. Moreover, the use value of these data will decline rapidly with time. Big data technology can process the physical fitness data of college students in real-time, ensuring the timeliness of big data.

## 5. Implementation Framework of Data-Driven Intelligent Governance of College Students’ Physical Fitness

At present, the big data-driven paradigm composed of data integration, data cognition, decision optimization, search and mining, prediction, intervention, and other processes has been widely applied in many fields such as process control, information management, decision support, trend prediction [14]. When it comes to the governance of college students’ physical fitness, the goal is not mastering the complete data information. The ultimate significance is to process these data in an intelligent manner to form a set of personalized, accurate, and diversified governance of the new form. The intelligent governance model of college students’ physical fitness constructed in this study is mainly composed of the physical fitness data center, physical fitness intelligent intervention engine, physical fitness data security governance, and other links (Figure 7).

### 5.1. Physical Fitness Data Center

The physical fitness data center is built on the basis of modern digital technology, which guarantees the intelligent governance of college students’ physical fitness. The physical fitness data center collects explicit data and implicit data both automatically and manually. Its value is reflected in the standardization, regulation, and model governance of data, so as to make decision-making more precise, personalized, and intelligent. The physical fitness data center mainly integrates, analyzes, and semantically processes physical fitness data of college students. First of all, it is necessary to integrate diversified data based on different sources and different ways to build a full data storage room. Second, the integrated data in the data storage room should be processed and analyzed by the intelligent algorithm, cloud computing, and other technologies combined with the actual demand. Finally, it is plausible to present the results of big data analysis to the participants in an intuitive and intelligible form through...
data visualization, virtual reality, and other technologies. At present, with the continuous development of digital technology led by big data, the technical problems of physical data centers have been basically solved, and the current difficulties mainly focus on port docking. The information of the responsible subjects directly related to the physical fitness of college students fails to be exchanged in real-time, which is an important factor restricting the effective mining, analysis, and judgment of the physical fitness data of college students. For example, the plates of many colleges and universities have been transformed and upgraded to be intelligent, so that students’ energy intake can be accurately calculated. However, there is no connection with the sports APP port, so students only know how much energy they have consumed today, but not how many calories they need to burn to achieve the goal of physical strength. Similarly, excessive exercise may have the opposite effect. In addition, due to the failure to connect with the educational administration system of the school and the port of the campus supermarket, students also lack data support in sports time recommendation and sports drink selection, so the accuracy of the physical fitness management of college students is not enough.

5.2. Physical Fitness Intelligent Intervention Engine. Physical fitness intelligent intervention engine is a cyclic structural intervention model with "user portrait, strategy matching, process control, and effect evaluation” as the core (Figure 8). It can provide strong support for the intelligent governance of data-driven physical fitness. On the one hand, the intelligent intervention engine can gather massive high-quality physical training resources and build a scientific and high-quality intervention program database with the help of artificial intelligence, cloud platform, and other advanced digital technologies. On the other hand, the intelligent training intervention engine can grasp the physical state of college students in real-time and provide dynamic, accurate, and personalized guidance to college students in real-time and provide dynamic, accurate, and personalized guidance to college students in time through testing and evaluation, dynamic monitoring and analysis, and mining of the real-time data of college students’ behavioral characteristics. (1) User portrait is the starting point of intelligent intervention. Accurate insight and diagnosis are carried out on college students’ exercise habits, body state, exercise experience, and physical fitness level, so as to find the foothold and powerpoint for intelligent governance of individuals. (2) Strategy matching makes governance decisions transform from experience to data intelligence driven. Governance decisions always point to more optimized and more effective training programs, which is the key to ensuring the effect of the intervention on college students’ physical intelligence. Based on the key representation of the real-time dynamic portrait of college students, the intervention plan or optimization strategy with the highest matching degree with the reality of college students can be extracted from the intervention plan database using multiple matching algorithms. The premise and basis for the accurate matching of the construction strategies of the intervention plan database is also the key for college students to achieve intelligent governance. When a user portrait appears and all kinds of data are collected in the early stage, the system needs to find the appropriate physical exercise program immediately from hundreds or even tens of thousands of databases. Of course, this huge database requires the pooling of multi-disciplinary knowledge. First of all, we have to classify college students according to their gender characteristics. Second, different solutions were given based on the different physical characteristics of students of different genders, such as body fat rate, endurance, flexibility, explosive power, and other factors, combined with their energy intake of the day and the time to effectively participate in physical exercise. For physically disadvantaged students, we should consider their specific physical characteristics, whether due to being overweight or super light, physical disability or disease caused by physical weakness. Further, build a database of interventions that are appropriate for them. For example, for overweight students, the database can match some physical exercise programs for strength and explosive force of upper limbs; for students with physical disabilities, the database can match some physical exercise programs for balance and coordination; for students with heart and lung diseases, the database can match some physical exercise programs of flexibility and
5.3. Physical Data Security Governance. The security governance of college students’ physical data plays an important role in the whole governance system, which involves not only network security but also the physical and psychological safety of college students. Therefore, the bottom line and basis of physical data management are to ensure the security of data. Physical fitness data not only involves health status or sports preference but also involves public personality characteristics, identity privacy, and other information. College students’ physical intelligent governance system is relatively open, and the subjects used are complex and diversified, which is likely to lead to the disclosure and illegal use of this information. On the whole, in the process of data-driven intelligent governance of college students, due to the immaturity of technology, the imperfection of relevant data governance system, and the inability to share, problems such as algorithm failure and data fallacy are inevitable at the present stage. These problems may bring some security risks to governance, which requires high attention to data security supervision.

6. The Promotion Path of Intelligent Governance of College Students’ Physical Fitness under the Background of Big Data

At present, “no data, no training” has become the basic criteria for high-level elite athletes to improve their physical fitness [15], and it is also applicable to the intelligent governance of college students’ physical fitness as well. However, problems on how to grasp the opportunity of data-driven technology, how to give full play to the advantages of modern information technology, and to realize the intelligent governance of college students’ physical fitness are a subject that the sports academia must face at present.

6.1. Create an Intelligent Concept Led by Data Thinking. The philosophy of governance is the prerequisite for governance actions. If the philosophy of the governance subject is insufficient in the practice of physical fitness governance, the process and effect will become seriously deviated. Therefore, in the intelligent governance of college students’ physical fitness, the philosophy of governance is supposed to be changed first. The traditional inherent thinking should be broken, the dissemination of the philosophy of intelligent governance with big data as the carrier should be continuously promoted, and the philosophy leading the modernization process of governance with big data thinking should be created to promote the smooth implementation of intelligent governance. In addition, it is also important to provide clearance on the philosophy of intelligent governance, take the strategic needs of national intelligent governance as the guidance combined with the physical status of college students, and speed up the development of schools as the carrier of the top-level design of intelligent sports. Colleges need to promulgate relevant policies on the intelligent governance of college students’ physical fitness from the macro level, and guide the understanding of governance subjects on the philosophy of governance from the top level. At the same time, it is necessary to create a cultural atmosphere of intelligent governance, and guide the philosophy of governance subject from “extensive” to “intelligent” from the aspect of public opinion publicity. In addition, the relevant reward and punishment system should
be improved to commend outstanding teachers who are responsible and effective in the process of physical and intellectual governance of college students.

6.2. Build a Data-Driven Intelligent Governance Service Platform. The construction of a data-driven intelligent governance service platform is the cornerstone of data-driven improvement of physical fitness. The platform should provide multi-source data mining and decision-making services on the basis of universal data acquisition and fusion functions, and realize real-time monitoring and visualization of dynamic data. First, technological development should be strengthened. From the perspective of the trend of data-driven intelligent governance in sports, most of the current research focuses on basic theoretical systems and applied generic technology research. Future technological innovation should fully consider the behavioral research of intelligent application of big data. Through the application of deep learning and other technologies, a systematic and scientific governance model is developed to make the model more intelligent to understand massive data. Second, it is necessary to build a complete physical database of colleges. For the intelligent governance of college students’ physical fitness, the development of a complete physical fitness database is not to simply centralize the traditional data, but to form a sequence through the database group, so that the traditional data can be acquired, integrated, decomposed, stored, processed and used in a small data subsystem. The collection of database information should be voluntary, legal, and comprehensive.

6.3. Accelerate the Intelligent Transformation and Upgrading of School Sports Venues. The development of information technology, such as big data, the Internet of things, and cloud computing has accelerated the exchange and cooperation of all walks of life. It also provides a material basis for the effectiveness of the intelligent governance of college students’ physical fitness. At present, school sports venues under the traditional management system are difficult to adapt to the requirements of the intelligent governance of national fitness service in school sports venues in terms of the organization mechanism, management mechanism, and operation mechanism. Therefore, it is urgent to upgrade the school sports venues to an intelligent level. In recent years, with the help of modern science and technology, some of China’s basic health programs have achieved comprehensive development and progress. This also intensifies the desire and demand for physical fitness big data, intelligent training venues, and digital physical fitness training centers in physical education of schools. Therefore, it is imperative to speed up the upgrade of school sports stadiums; build up intelligent physical fitness training venues that capture motion feedback; quantitatively evaluate multiprocesing, strength, and speed strength indexes; prevent and intervene in sports injury; and allow shared data mining and cloud sharing. This is the prerequisite to achieving progress in enhancing the physical fitness of college students with the help of technology as well as the best way for accurate data-driven physical intervention.

6.4. Improve the Data Literacy of Physical Education Teachers in Colleges. The data literacy level of PE teachers in colleges and universities is the key factor restricting the intelligent governance of college students’ physical fitness. However, many teachers do not have the ability to use big data for accurate diagnosis, scientific policy-making, and effective training. Therefore, teachers need to be trained by both online and offline methods. Only teachers with good data literacy can fully excavate and utilize the potential of data in college students’ sports activities. First of all, it is imperative to make teachers clear about the concept of data and the driving benefits of data for college students’ physical fitness. Second, it is necessary to set up a data literacy certification mechanism for PE teachers, and put data literacy into PE teachers’ professional ability evaluation. Finally, it is necessary to establish a perfect pre-service and post-service training mechanism for physical education teachers, improve their data processing ability, analytical ability and collection, interpretation and application skills, improve their ability to integrate data literacy and physical fitness governance practice, and form the awareness of using data to explain and solve the difficulties, blind spots and specific problems in promoting the physical fitness of college students [4, 16].

7. Conclusion

As Viktor Mayer-Schönberger says, “Big data is a huge transformation of the times.” Data-driven transformation of intelligent governance of college students’ physical fitness is an inevitable choice for effective physical fitness governance. Based on the in-depth analysis of the current physical fitness of college students in the era of big data, this study, through a rational review of the value of big data to the intelligent governance of physical fitness, discovers that big data can ensure the scientific nature of governance decisions, the accuracy of governance information, the controllability of governance process, and the timeliness of governance information processing. On the basis of fully affirming the importance of big data to the intelligent governance of physical fitness, this study further builds the model to realize the intelligent governance of physical fitness of college students and makes specific strategies to promote it under the background of big data. Through the development of the model and the formulation of the strategy, this study provides a new perspective and an important tool for promoting college students’ physical fitness. What’s more, it serves as a beneficial enlightenment for the development and improvement of the intelligent governance model of college students’ physical fitness.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.
Conflicts of Interest
The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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