Research on the Selection Method of Students' Sports Quality Based on Big Data

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Abstract: This project involves the technical fields of direct application to students' primary selection, accurate options to show teenagers' sports ability, teenagers' sports function detection and correction, teenagers' physical fitness and teenagers' sports training, and discloses the methods to discover teenagers' sports potential under the background of big data. The method steps are as follows: step one, measure physical fitness and sports function in the form of game class, set up 12 games to discover teenagers' sports potential, and measure more than 60 sports function indicators through the course form; Step 2, measure the body function through the instrument. The discovery method of teenagers' sports potential under the background of big data, through the application of big data method, based on the comprehensive application of sports ergonomics, sports metrology, sports material selection and big data, combined with the accurate data report given by big data platform, makes the evaluation system more scientific, accurate and effective.

Keywords: big data, students, sports, quality selection

1. Introduction

At present, there are three methods for selecting sports materials: laboratory selection, coach experience selection and school physical fitness measurement.

Among them, the selection of materials in the laboratory is scientific, but the measurement content is complex, which is not suitable for large-scale selection. The scientific basis for the selection of coaches' experience is insufficient. The national physical fitness measurement focuses on physical fitness indicators, and the evaluation of sports ability is difficult. Our achievement can solve these three shortcomings, so that children can complete the selection measurement in happy games, which can be applied to the selection of materials for students at all levels. More importantly, it is based on the guidance of sports prescriptions and sports options given for children's healthy growth, which can be used in schools, training institutions and fitness venues, which is beneficial[1].

2. Project content

In view of the shortcomings of the existing technology, this project provides a method to discover the sports potential of teenagers under the background of big data, which can be based on the comprehensive application of sports ergonomics, sports metrology, sports material selection and big data, and quantify many sports functions and physical function indexes of teenagers through fun sports game classes. Senior experts in youth sports combine the data report given by big data plaorm to comprehensively evaluate children's physical function, which solves the problem of laboratory material selection science. However, the measurement content is complex, so it is not suitable for large-scale selection, the scientific basis of coaches' experience selection is insufficient, the national physical fitness measurement focuses on physical fitness indicators, and the evaluation of sports ability is difficult[2].

The project provides the following technical scheme: a method for discovering the sports potential of teenagers under the background of big data, which comprises the following steps:

Step one, measure physical fitness and motor function in the form of game class.

Step 1 games for teenagers to discover their sports potential, and measure more than 60 sports

function indexes through the course form;

Step 2, measure the body function through an instrument.

By measuring more than 20 physical function indexes with professional instruments, they can not only improve their physical fitness in happy sports games, but also obtain more comprehensive and scientific measurement data;

Step 3: Comparative analysis of data systems.

Combine the measured data in step 3 for comprehensive evaluation, and give the most scientific evaluation report of children's sports potential tendency;

Step 4, authoritative experts make comprehensive evaluation and make accurate breakdown.

Combined with expert opinions, recommend the "dominant" sports that are most suitable for children to show their athletic ability and the "complementary" sports that balance their physical fitness [3].

In the first step, through the game course, the game course design mainly includes track and field, ball games, gymnastics and martial arts, etc. According to the characteristics of basketball, volleyball, football, track and field, gymnastics and martial arts, students can be organized to create games and organize sports game teaching, so as to improve their ability to create sports games and organize teaching, so that children can improve their physical quality in sports games and quantify their balance, coordination, sensitivity, endurance, explosiveness and explosiveness[4].

In the second step, the child's height, weight, shoulder width, abduction, sebum thickness, physical proportion, sitting height, arch height, leg length, arm length, hand length, head length, neck length, foot length, chest circumference, arm circumference, leg circumference, waist circumference, hip circumference, head width, hip width, palm print and other morphological indicators, vital capacity, heart rate[5].

In step 3, by combining the measurement results of step 1 and step 2, relying on the data report given by the big data plaorm, the senior professor of youth sports combined with the data report[6].

In the fourth step, the senior professor of youth sports combined with the data report made a comprehensive evaluation of children's sports face to face, found and corrected the shortcomings of children's physical development, and accurately defined the "advantages" and "shortcomings" of children [7].

Using anthropometry to determine the students' respective morphological and somatotype characteristics from the data measured by outstanding students in various sports events, as the basis for selecting students, the information of children and adolescents' morphological, genetic, physiological, psychological and various sports abilities is obtained through investigation and testing, and it is quantitatively described and scientifically analyzed, so as to finally obtain the information of various realistic States, and make the first comprehensive "diagnosis" of students' initial sports ability. According to this diagnosis, By analyzing the potential of students' ability and the suitable direction of exercise, the children's "advantages" and "shortcomings" can be accurately defined, and the exercise prescription and exercise option guidance can be given[8].

3. Specific mode of implementation

The method for discovering the sports potential of teenagers under the background of big data includes the following steps:

3.1 Game class form to measure physical fitness and motor function

Set up 12 games for teenagers to discover their sports potential, and measure more than 60 sports function indicators through the course form. Through the game course, children can improve their physical fitness in sports games, and quantify their physical fitness such as balance, coordination, sensitivity, endurance, explosiveness, flexibility and speed. The level of physical fitness and athletic ability refers to the strength, speed, endurance, agility and flexibility of the body in sports and the physical athletic ability such as walking, running, jumping, throwing and climbing. In the game curriculum design, track and field, ball games, gymnastics and martial arts are emphasized, and students can be organized to create games and organize sports game teaching through the characteristics of basketball, volleyball, football, track and field, gymnastics and martial arts. To improve students' ability to create and organize

sports games and teaching organization, compared with the past, children can complete the material selection measurement to obtain data in happy games, which is easy for children and parents to accept[9].

3.2 Measuring body function through instruments

More than 20 physical function indexes are measured by professional instruments, so that they can not only improve their physical fitness in happy sports games, but also obtain more comprehensive and scientific measurement data. Children's height, weight, shoulder width, arm span, body fat, vital capacity, heart rate, bone age, muscle type, physical proportion, palm print, intellectual form and functional indexes are measured by professional instruments, and the indicators reflecting external morphological characteristics are height, length and function. The height includes height, sitting height and arch height, the length includes leg length, arm length, hand length, head length, neck length and foot length, the circumference includes bust, arm circumference, leg circumference, waist circumference and hip circumference, the width includes head width, shoulder width and hip width, and the fullness includes weight and sebum thickness, among which the body shape indicators include height, weight, sitting height, chest, waist and hip. Its exercise system includes muscle strength, electromyography and joint extension. Muscle strength can be detected by isokinetic muscle strength testing and training system, which can test the muscle strength of all joints of human body, recover the muscle strength after sports injury, train students' muscle strength and neuromuscular control training. Muscle strength evaluation mainly includes maximum muscle strength, explosive force and muscle endurance, and there are three forms of isometric strength, isotonic strength and isokinetic energy. Electromyography (EMC) is a graph obtained by amplifying and recording the action potential generated when muscle fibers are excited by electromyography. The joint extension can be used to evaluate the flexibility of students by measuring the range of activities of related joints of subjects. Among the circulatory system indicators, circulatory system indicators mainly include the indexes of heart shape, structure and cardiovascular function[9]. The indexes of respiratory system and energy metabolism mainly include vital capacity, time vital capacity, lung ventilation, maximum lung ventilation, oxygen uptake, maximum oxygen uptake and respiratory endurance, while the indexes of nervous system and energy metabolism mainly include simple visual-motor reaction time, simple auditory reaction time, comprehensive reaction time, visual flash fusion threshold, limb balance function, hand coordination function, vestibular organ stability function, visual depth and muscle proprioception[10].

3.3 Comparative analysis of data systems

Combine the measured data in step 3 to make a comprehensive evaluation, and give the most scientific evaluation report of children's sports potential tendency. By combining the measured results in step 1 and step 2, relying on the data report given by the big data platform, the senior professor of youth sports should master the basic theories and knowledge of biological science, clinical medicine and physical education, and at the same time master the analysis methods of students' physical function diagnosis and evaluation, sports health care and rehabilitation. It has the basic ability to engage in teaching, research and experimental operation of sports human science. There is a certain dependence between sports events and morphological characteristics in sports metrology. The data measured by anthropometry from outstanding students in various sports events can roughly determine the respective morphological and somatotype characteristics of students in various sports events, which can be used as the basis for selecting students. In general, through investigation and testing, Obtain the information of children's students' morphology, heredity, physiology, psychology and various sports abilities, and make quantitative description and scientific analysis, so as to finally obtain the information of various realistic States. The selection of athletes is the first comprehensive "diagnosis" of athletes' initial sports ability. According to this diagnosis, the potential of their students' ability and the suitable sports direction are analyzed first, and the information of material selection test is an important basis for starting to implement the early professional sports training plan. Senior professors of youth sports need to use big data method, based on the comprehensive application of sports ergonomics, sports metrology, sports material selection and big data, and combined with the accurate data report given by big data platform, to make the evaluation system more scientific, accurate and effective, with wider application scope, stronger practicability, operability and popularization, and suitable for large-scale material selection;

3.4 authoritative experts make comprehensive evaluation and accurate breakdown.

Based on expert opinions, it recommends the most suitable "advantageous" sports projects for children to demonstrate their athletic abilities and the "complementary" sports projects for balancing

physical fitness. It should conduct face-to-face comprehensive evaluation of children's sports through senior professors in adolescent sports and data reports, in order to identify and help correct children's physical development deficiencies, accurately identify children's "advantageous" projects and "complementary" projects, accurately identify the child's "strengths" and "gaps" projects. Therefore, exercise prescription and exercise option guidance can be given, and the data measured by anthropometry from excellent students in various sports events can roughly determine the respective morphological and physical characteristics of students in various sports events, which can be used as the basis for selecting students, finding out the sports strengths and weaknesses of children, recommending the "dominant" sports events that are most suitable for children to express their sports ability and recommending the most suitable physical exercise programs for children in combination with expert opinions. At the same time, he is good at recommending sports that balance physical fitness, so that children can make up their shortcomings and have more outstanding specialties, so that children can take fewer detours, so that parents can save time and money and avoid blindly reporting classes. At the same time, children with outstanding specialties can be recommended to take the professional sports road to serve sports teams at all levels.

4. Conclusion

1) The method of discovering the sports potential of teenagers under the background of big data, through the application of big data method, based on the comprehensive application of sports ergonomics, sports measurement, sports material selection and big data, the height, sitting height, arch height, leg length, arm length, hand length, head length, neck length, foot length, chest circumference, arm circumference, leg circumference, waist circumference, hip circumference, etc. Combined with the accurate data report given by the big data platform, the evaluation system is more scientific, accurate and effective, with wider application scope, stronger practicability, operability and popularization, which is suitable for large-scale selection, greatly increasing the scientific basis for coaches' experience selection and reducing the difficulty of sports ability evaluation.

2) The method of discovering the potential of young people's sports under the background of big data is different from the measurement method of selecting materials in the past. According to the characteristics of basketball, volleyball, football, track and field, gymnastics, martial arts and other sports, the teaching content of sports games is designed, and students are organized to complete the course, and the data of selecting materials is obtained during the children's game, which is easy for children and parents to accept.

3) The discovery method of teenagers' sports potential under the background of big data, through data analysis, can find out the problems existing in children's physical fitness, and give sports assistance in time. According to the comprehensive evaluation of children's sports according to the report, the senior professor of youth sports makes clear the children's "advantages" and "shortcomings" projects, so as to give exercise prescriptions and exercise options guidance, and find out the children's sports strengths and weaknesses.

4) The method of discovering the sports potential of teenagers under the background of big data, by discovering the strengths and weaknesses of children's sports, combining with expert opinions, recommends the "dominant" sports that are most suitable for children to show their sports ability, and at the same time gives the "complement each other" sports that balance their physical fitness, so that children can fill in the shortcomings and have more outstanding specialties, so that children can take fewer detours, so that parents can save time and money and avoid blindly signing up for classes.

5) The method of discovering the sports potential of teenagers under the background of big data, using the data measured by anthropometry from outstanding students in various sports events, can roughly determine the respective morphological and physical characteristics of students in various sports events, which can be used as the basis for selecting students. In general, through investigation and testing, information on the morphology, heredity, physiology, psychology and various sports abilities of children and teenagers is obtained, and quantitative description and scientific analysis are carried out. In order to finally obtain the information of various realistic conditions, the selection of athletes is the first comprehensive "diagnosis" of athletes' initial sports ability. According to this diagnosis, the potential of their student ability and the suitable sports direction are analyzed first, so as to achieve accurate children's "advantages" and make children with outstanding skills recommend taking the professional sports road to serve sports teams at all levels.

Acknowledgemnet

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