

Computer Database and Data Science in the Teaching Practice of Youth Sports Health

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Abstract: With the rapid development of computer data technology, computer technology and data mining technology, including the current popular area. Online distance learning courses and online education systems are developing rapidly. Use it in the learning process. In the online learning process, sports professionals need to combine job descriptions and performance demonstrations, and students can better understand and simulate actions through video demonstrations of the learning process. This book is designed to allow students to receive higher quality, more comprehensive advanced personal training while enhancing the training and management of sci-fi educational software and research algorithms. The first book of this book summarizes the basic knowledge of computer data and data mining technology, and further introduces your core logic technology. Combined with the current situation of China's online sports programs, it analyzes the current problems and deficiencies in China's physical education.

1. Introduction

Computer-based learning models have their own behavior and qualities. It can not only improve the morale of students, but also completely change the traditional defects of the classroom and teachers. This is done to differentiate teaching and communication methods. Both the facilitation and teaching methods have been redesigned and improved in terms of efficiency and scalability [1-2].

Xu Yu from Hunan Normal University studied the quality control principles of online sports services and wrote an article entitled "Constructing a Quality Management System for Online Sports Services". His point of view is that in the era of advanced Internet technology, the development of sports and self-disciplined games is a factor leading to the development of sports

network services. The development of the two expands the prospects of the physical education system and provides new ways and means of development. [3].

This article aims to improve the quality of health test data management and computer-based data systems researched in this article, including key elements for improving children's health and resources and computer and data systems. Analyze the comparison of the curriculum to determine the likelihood of sports health problems.

2. Design and Algorithm Analysis of Sports Health Teaching Data Mining Based System

2.1. Database and Data Science

Database and data science mainly study computer science and big data processing technology and other related knowledge and skills. Starting from the three main aspects of big data application, it analyzes and solves practical problems [4-5].

2.2. Analysis of User Needs

(1) Follow the Principle of Outstanding Teaching Objectives and Teaching Content

By fully analyzing the teaching objectives and teaching content, the teaching activity process can be used to create the context, so that the importance of the context in the learning process is reflected [6-7];

(2) Follow the Principles of Information Design

Make full use of various information resources and support students' learning through various digital resources [8-9];

(3) Highlight the Principle of Student-Oriented

In the program design process, there is an urgent need to take students as a center, to pay full attention to the independent education of students and to pay attention to collaborative education. During the design process, full attention is paid to the design of the collective education space.

2.3. System Overall Design

(1) System Function Module Design

1) Design of teaching system

This module realizes the direct browsing of the teaching resources.

2) Online Q&A module

Through the online question and answer session, after-class communication between teachers, students, teachers and professors is realized, and students provide Q&A after class. In the BBS section, students ask the teacher, and the teacher answers the questions. Direct communication between teachers, students, teachers and educators. Sports coaching is the teacher's sports coaching for students [10].

3) Job

Manage the class jobs in this module.

4) Exam module

Manage the test content in this module. Management of technical action standards, project standards, theoretical assessment and other work. Inspection results, and publish the inspection results [11-12].

(2) System Database Design

The physical education and health teaching system uses the database management information system to realize the equivalent data storage and recording. Combined with the actual situation of the campus network, comprehensively considering the specific function requirements of the sports network auxiliary system, the computer operation level and other factors, the sports network auxiliary system is designed based on the network database management information system, and the data storage model is constructed.

2.4. Module Detailed Design and Implementation

(1) Detailed design and implementation of data access

ADO technology is effective. ADO technology is the data access component of ActiveX components. The ASP database is accessed by ADO, which has the advantages of intelligence, simplicity and powerful performance. It also allows web developers to access database data. Developers can use ADO to seamlessly access multiple data sources on the Internet. ADO information works like scenarios when identifying ASP integrations. That is, the access point of the above database is independent of the client browser, so it is more advanced and more practical.

(2) The Detailed Design and Implementation of the Management Student Teacher Module

Once you open your browser and enter the program view, you cannot access the program directly. You must be logged in to access the program. First, press the "User Login" menu button on the interface, and the program will enter the system. Login to view. When a system certificate error occurs, the system will prompt the user error or password error, and remind the user to re-enter. If the user is a new user, they must register and open a connection before using the program. interface, click the register button, and designate a new user to register according to the page patent. In the admission information, you should check the credentials, including student ID, teacher ID, etc. Choose the correct one. Enter and add the permissions of the registered account according to the certificate type. For example, if the user selects the certificate type as student ID, the program will grant you the right to apply when the user logs in. If the type of certificate you entered is a teacher service certificate.

(3) Detailed Design of Teacher Application Module

System administrators can manage teaching. Add, modify and delete operations for teachers through the database.

(4) Detailed Design and Implementation of Student Applications

Users register and submit personal information on this interface. Only through the registration of relevant information can you have an account for relevant operations.

2.5. Data Mining Standardization

Data transformation transforms data into a form suitable for mining. For the preprocessing of the clustering algorithm, the data transformation is mainly to normalize the data.

There are many data normalization methods, such as: 1) Min-Max normalization

Assume that \min_A and \max_A are the minimum and maximum values of attribute A, respectively. The calculation formula (1) of the value v' that maps v in the interval:

$$v' = \frac{v - \min_A}{\max_A - \min_A} (\text{new_max}_A - \text{new_min}_A) + \text{new_min}_A \quad (1)$$

If the new value interval is [0,1], the formula can be simplified as:

$$v' = \frac{v - \min_A}{\max_A - \min_A} \quad (2)$$

2) Normalization of the first sample

The previous method does not maintain the proportional relationship of all samples on a single attribute. This article proposes a method of normalizing the first sample. The main idea of normalization of the first sample is to divide the original value of attribute A by the value of attribute A of the first sample, but this method is not suitable for the data set where the attribute value in the first sample contains a value of 0.

The result of the normalization of the first sample maintains the proportional relationship between all samples and the first sample on a single attribute, and all attributes are divided into a relatively stable range.

3. Experimental Research on Physical Health Teaching System Based on Database and Data Science

3.1. Design Experiment

To make this test more scientific and effective, this test compares and analyzes traditional physical education teaching methods and physical education and health systems based on data mining at some colleges and universities to judge the likelihood of computer data. Scientific data used in youth education programs and health training activities. The test is conducted in the form of a questionnaire and the physical education students participating in the research are of all ages. Young students have completed most of the lessons and can contribute to experimental data. Statistical calculations of the obtained results were also performed using mathematical calculations.

In addition, the performance and health education system of preschool adolescents studied in this study were analyzed through in-person interviews with teachers. A total of 20 physical education teachers participated in the calculation and 10 glasses were used for the calculation.

3.2. Research Methods

(1) Questionnaire Survey

This study creates a focus questionnaire based on questions from relevant experts. And he started fighting in a close-knit culture with the idea of promoting the full potential of the students he led.

(2) Field Research

This study analyzed the current situation of sports and health education and collected data by going deep into the sports major of a certain university. These data provide a reliable reference for the final findings of this paper.

(3) Interview

This paper conducts face-to-face interviews with relevant physical education teachers and organizes and analyzes recorded data. This data not only provides scientific reference for the selection of subjects, but also supports the final results of this work.

(4) Mathematical Statistics
The results of this study were counted and analyzed using relevant software

4. Experimental Analysis of Sports Health Teaching System Based on Database and Data Science

4.1. Comparative Analysis of Physical Education and Health Teaching System

In order to make this experiment more scientific and effective, this experiment was studied in the form of a questionnaire survey. The obtained data are shown in Table 1.

Table1. Comparative analysis of sports health teaching system

	Teaching methods	Education resources	Learning efficiency	Others
Database	72.3%	70.8%	69.7%	66.3%
Traditional	58.0%	62.1%	59.8%	52.7%

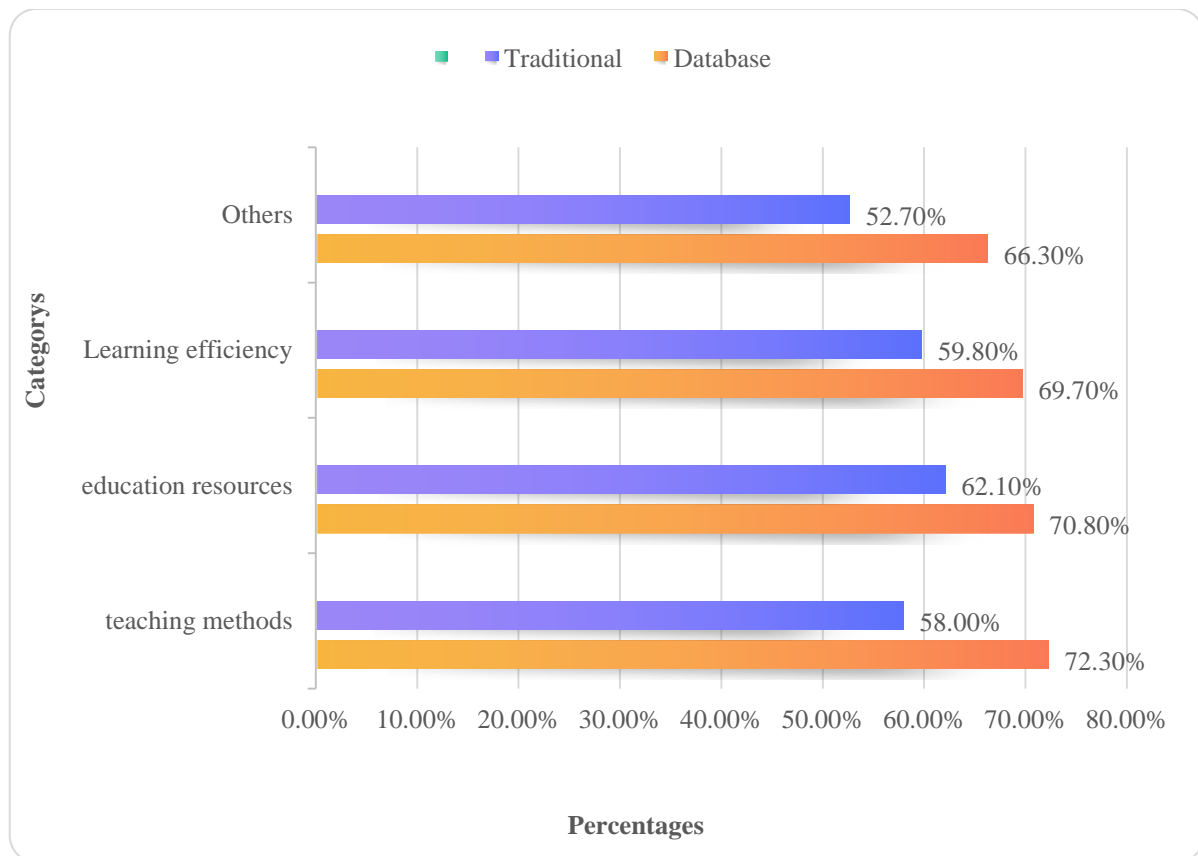


Figure 1. Comparative analysis of sports health teaching system

As can be seen from Figure 1, compared with traditional sports, the youth health education system based on data mining studied in this book is excellent in many aspects, especially in terms of teaching methods, more than 15%, which fully reflects the Potential of youth sports health education system based on data mining technology.

4.2. Performance Analysis of Adolescent Sports Health Teaching System Based on Data Mining

For the experimental analysis of the research content of this paper, this experiment will organize and count the data by interviewing the relevant teachers and collecting the data, as presented in Table2.

Table 2. Performance analysis of youth sports and health teaching system based on data mining

	Convenience	High efficiency	Robustness	Others
1	6.12	7.26	6.25	5.49
2	6.36	7.48	6.18	5.85
3	6.48	7.56	6.19	5.96
4	7.03	7.89	6.28	5.47
5	6.25	6.48	6.09	6.02
6	6.48	8.19	5.59	5.03
7	6.33	9.02	5.48	5.78
8	7.09	7.82	6.71	5.69
...				
20	6.98	7.66	6.18	6.03

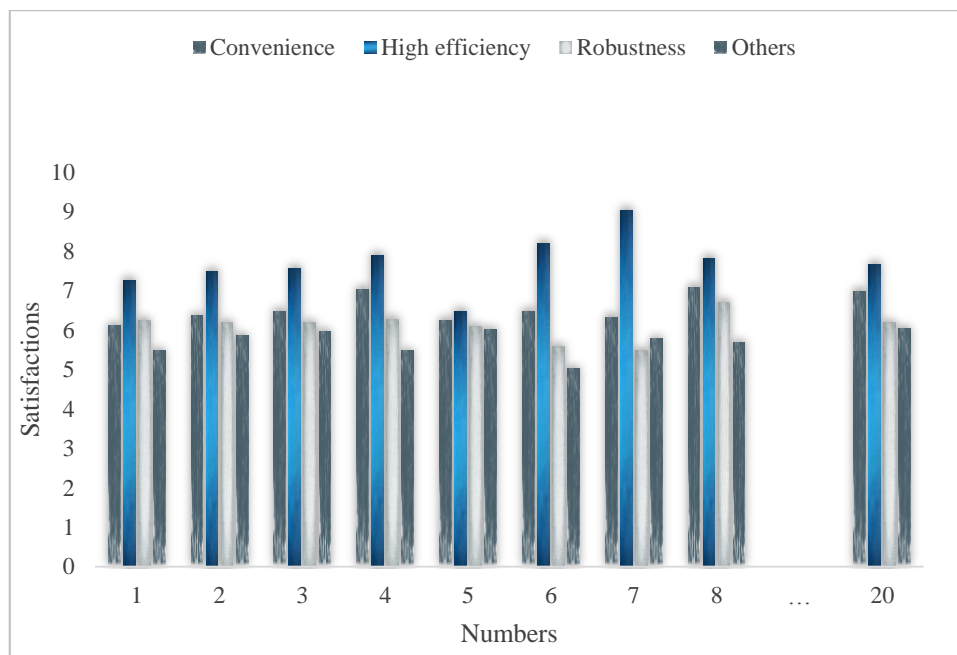


Figure 2. Performance analysis of youth sports and health teaching system based on data mining

As shown in Figure 2, the evaluation of the researched youth sports and health education system based on data mining is past 5, indicating that the subject of this activity is possible. Among them, the efficiency of education is high, which reflects the excellent performance of data mining and data-based health education system.

5. Conclusion

Exercise can improve the physical and mental health of students. Physical education programs must combine teaching and exercise. The combination of writing and data technology solves the time and space limitation of physical education, meets the requirements of physical communication, and promotes the development of physical education. Therefore, the computer data and data studied in this book are of great significance for the application of science to youth education and health and sports. Promote physical education.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

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