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Article

Study on the relationship between students' behavioral health and biomechanical indexes based on data mining

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Abstract: There is an interaction between behavior and health, and behavior monitoring information plays a role in reminding people of the need to maintain healthy behaviors or change unhealthy behaviors. Behavior monitoring information can explain the universality of behavior, analyze relevant influencing factors, determine specific actions to be followed, and carry out health education and publicity. It can also be used to trigger behavioral change trends, and evaluate and review health education and promotion programs. Behavioral monitoring information helps to explain changes in health status related to behavior. Because students are in a special period of physical and psychological development, their behavior is different from other periods. With the development of social culture, science and technology, the concept of modern health has changed from simple physical health to psychological and behavioral health. Based on this, this paper first investigated the definition and influencing factors of student behavior, focused on the definition of student behavior, expounded the classification and manifestation of student behavior, and analyzed the influencing factors and indicator system of student behavior. Then, from the construction of the student behavior monitoring system, it discussed the analysis and collection technology of student behavior data and the analysis and prediction model of student behavior, put forward the visualization model of student behavior big data, and discussed the design of the student behavior monitoring system based on data mining from two aspects, namely, the system functional requirements analysis and the overall system architecture design. Then the decision support algorithm was used to strengthen the detection of students' health behavior. According to experiments and surveys, big data mining and decision support algorithms strengthen the construction of student behavior health monitoring system, and build a new student behavior health monitoring system, which is 33% more satisfied than the traditional student behavior health monitoring system.

Keywords: student behavior; health monitoring system; big data mining; decision support

1. Introduction

The social change brought about by economic development, industrialization and urbanization is a social structure. The behavior of students is more easily affected by environmental factors than that of adults, and directly reflects the psychological state. The student period is a period of behavior cultivation. During this period, the behaviors that accompany the development of life often affect their life style as adults. Bad behaviors may lead to diseases and affect the advantages and disadvantages of the whole society. In the process of health education for students, in addition to dealing with psychological diseases, correcting problematic behaviors and reducing dangerous behaviors, people must also pay attention to the occurrence and development of students' daily behaviors.

Student health monitoring system is widely used in student behavior. Wienen et al. believed that school-wide positive behavior support is a systematic approach to

implement positive school-wide discipline and improve students' academic and behavioral outcomes through the organization and social culture of the school [1]. Jackson found that although teachers have a significant impact on the scores and non-cognitive skills of both tests, their impact on non-cognitive skills is the impact of the prediction multiple of students' long-term success in high school on the test results [2]. Liebowitz and Lorna reviewed the empirical literature on the research of major behaviors and the results of students, teachers and schools, and conducted a meta-analysis of these relationships [3]. Ichsan et al. used a descriptive method to collect data online using Google Forms. The results showed that students' scores have been in very high categories [4]. Raza et al.'s goal was to test the basic role of academic adjustment on students' academic success by considering the impact of several psychological, motivational and behavioral factors that affect college students' academic adjustment, which in turn affect students' academic achievements [5]. Hott et al. tried to investigate whether the current academic and functional level performance is consistent with the annual objectives, and whether the document meets the substantive requirements of the two procedures and development [6]. The main purpose of Hollo et al. was to explore whether the language components vary according to the behavioral subtypes. In order to control the confounding factors related to sampling and measurement in previous studies, a comprehensive language measurement method was used to measure the acceptability of boys with emotional disorders, and an overview analysis of high-level language skills was carried out [7]. The above research has analyzed student behavior, but there are still some deficiencies in the research of student health monitoring system.

Many scholars have analyzed and studied the health monitoring system. Campisi et al. believed that understanding the burden and determinants of adolescent suicide is the key to achieving global health goals. The prevalence and determinants of self-reported suicide ideation and attempt among younger and older adolescents were studied [8]. Di Nuzzo et al.'s research found that monitoring civil infrastructure is essential to track aging, and damage and ultimately prevent serious failures that may endanger the lives of many people. From the perspective of economy and life safety, the ability to monitor the integrity of various buildings in a continuous and fine-grained manner is called structural health monitoring [9]. Wu et al. introduced the design of a compact wearable sensor patch for measuring different physiological signals, such as electrocardiogram (ECG), photocapacitance pulse wave and body temperature [10]. Park et al. described easy-to-deploy hardware and software for long-term analysis of users' excreta through data collection and human health models [11]. Qi et al. proposed an adaptive recognition and real-time monitoring system for human activities, which was expected to recognize more human movements under dynamic conditions. An unsupervised online learning algorithm was introduced, which was independent of the number of class constraints [12]. Wu et al. proposed a new family health monitoring federated learning framework based on cloud edge. This framework learns the shared global model from multiple families at the edge of the network, and achieves data privacy protection by saving user data locally [13]. Melcher et al. studied the mental health of college students to describe how digital phenotypes best serve college students and determine best practices [14]. The above research describes the

health monitoring system, but there are still some deficiencies in the study of student behavior.

In order to study the application and construction of the student behavior health monitoring system, this paper analyzes the analysis, definition and influencing factors of student behavior, and studies the construction of the student behavior monitoring system, so as to further deepen the reform of the application and construction of the student behavior health monitoring system. The analysis uses big data mining and decision support algorithms to improve the student behavior health monitoring system. Compared with the current student behavior health monitoring system, the student behavior health monitoring system built by using big data mining and decision support algorithm is more accurate, which is conducive to building a more complete student behavior health monitoring system.

2. Evaluation, definition and influencing factors of student behavior

2.1. Definition of student behavior

Different levels of problem behavior have different definitions, which blur the definition of problem behavior. According to experts' definition of problem behavior, problem behavior causes indirect or direct damage to students' state, health, and even the quality of life and health of adolescents after growing up. Other scholars define problem behavior as adolescents' deviation from expectations of individuals, schools, families and society, which causes indirect or direct damage to their own growth and health, and subsequent quality of life and health.

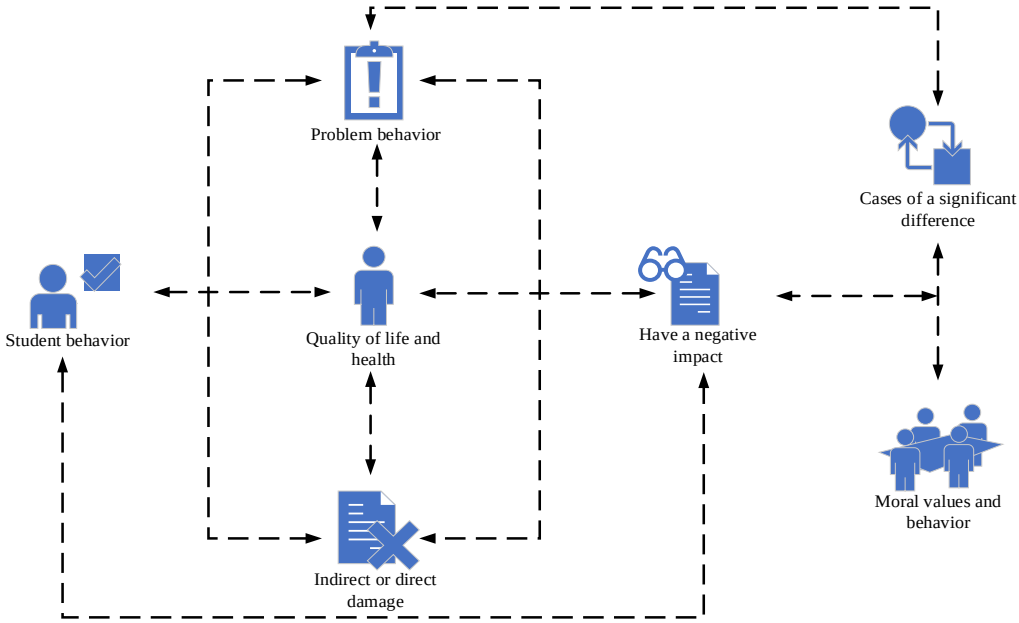

Figure 1. Definition of student behavior.

Generally speaking, problem behavior would also have a negative impact on students and even groups, and hinder the formation of good morality and the development of physical and mental health of students. However, the definition of student problem behavior cannot be blind, and must be carefully defined. This means

that students' behavior must be compared with the normal behavior of the age group, and can only be defined as problematic behavior if there is significant difference. Secondly, problem behaviors must be dangerous and destructive, and affect students' moral values and behaviors. These bad behaviors have an impact on students' learning and life, and even on families, schools and society, as shown in **Figure 1**. Finally, attention must be paid to identifying and distinguishing the difference between problem behavior and criminal behavior.

2.2. Classification and manifestation of student behavior

Scholars divide students' behaviors into seven categories: behaviors with nervous system problems, behaviors with emotional problems, behaviors with intellectual problems, behaviors with personality problems, behaviors with attention deficit hyperactivity disorder problems, behaviors with habits problems and behaviors with social and moral problems. Problem behaviors include behaviors involving moral issues, fraud, non-compliance with rules, etc. The behavior of academic problems is manifested in wrong teaching methods, prejudice against learning motivation, etc. Communication problems are manifested as communication barriers, autism, etc. Emotional behaviors are manifested as fear, attack, inferiority, self-centeredness, dependence, etc.

2.3. Influencing factors and indicator system of student behavior

The factors affecting students' behavior are related to personality type, academic performance, family environment and other factors. Students' behavior indicators include interpersonal relationship index, which includes students' perceived attitude and satisfaction towards love, family and friendship, and negative emotion index. The content of negative emotion index mainly includes duration, physiological condition, intensity, reaction mode, stimulus source, etc. The last indicator is the social environment, especially the relationship between students and parents, family members, students' growth and education environment, and students' satisfaction with school management. The factors combined with these students' resources include student achievement, family environment, negative life events, student background, gender, etc.

3. Construction of student behavior monitoring system

3.1. Evaluation and collection technology of student behavior data

Traditional student behavior management is usually based on experience and management path. Modern big data applications allow students to actively capture the characteristics and patterns of student behavior, and conduct research and prediction on this basis to realize the innovation of school active management mode. It is necessary to verify the actual value of education data in the teaching and learning process, develop a student behavior analysis and big data early warning management platform, and provide psychological counseling to students according to the school quality and students' daily behavior. It is also necessary to use some preventive measures, such as consumption behavior, truancy and insufficient credit, deeply

explore students' psychological problems, and pay special attention to students with problems.

The rapid development of mobile internet, internet of things, cloud computing and social network has led to the unprecedented growth of student behavior data, which is of great value. At present, student behavior analysis methods mainly involve correlation analysis, classification prediction, abnormal analysis, etc. They all need to collect a large amount of data. Student behavior analysis data includes structured and unstructured data. Structural data includes distributed information systems, which can be collected and transformed. Most unstructured and semi-structured data come from the Internet, community forums, etc. Data collection platform and data processing tools must be used to collect data.

3.2. Student behavior evaluation and prediction model

Student behavior analysis is based on the educational data research methods of statistical analysis, clustering, prediction, relationship research, text research, student behavior analysis, student emotion analysis, emotional attitude, behavior track, family background, classroom examination, and extracurricular activities. It is necessary to analyze the correlation of various reward and punishment statistical data from different angles, determine the grade index and weight of each module of the analysis system, analyze personality characteristics and behavior patterns in depth, and analyze the living habits and intelligence level of each student. Based on unstructured data such as voice, a big data student behavior analysis and safety early warning management model is built to avoid problems and achieve safety management objectives.

3.3. Student behavior big data visualization model

Big data has great application value, but if no one can understand the meaning of data, any big data analysis method would not work. Big data mining technology can build a large database of student behavior and form visual data, which makes it easy for administrators to observe and analyze the information contained in user data through data relationship tables, and display all user data and its structural links more intuitively and conveniently. The analysis of student behavior data is abnormal. First, it is cluster analysis with similar behavior characteristics. Finally, it is to create big data analysis modules with different themes.

Students' test scores, excellence rates, etc. can automatically generate different dynamic curves during school study. Teachers can intuitively record students' learning and development trends. By tracking network behavior, they can analyze the hot issues of students' use of the network to analyze students' attention to current and political sensitive issues. Teachers and students can use these data for public opinion analysis. The systematic analysis of student safety data can visually visualize students' emotions and attitudes, and capture students' physical and mental health problems in real time, as shown in **Figure 2**. In addition, data can be exchanged between students' personal records of emotional problems, behavioral cues, contact data and learning and communication areas. If the system detects signs of instability or abnormal data, it is necessary to closely monitor and track the behavior of students to avoid problems.

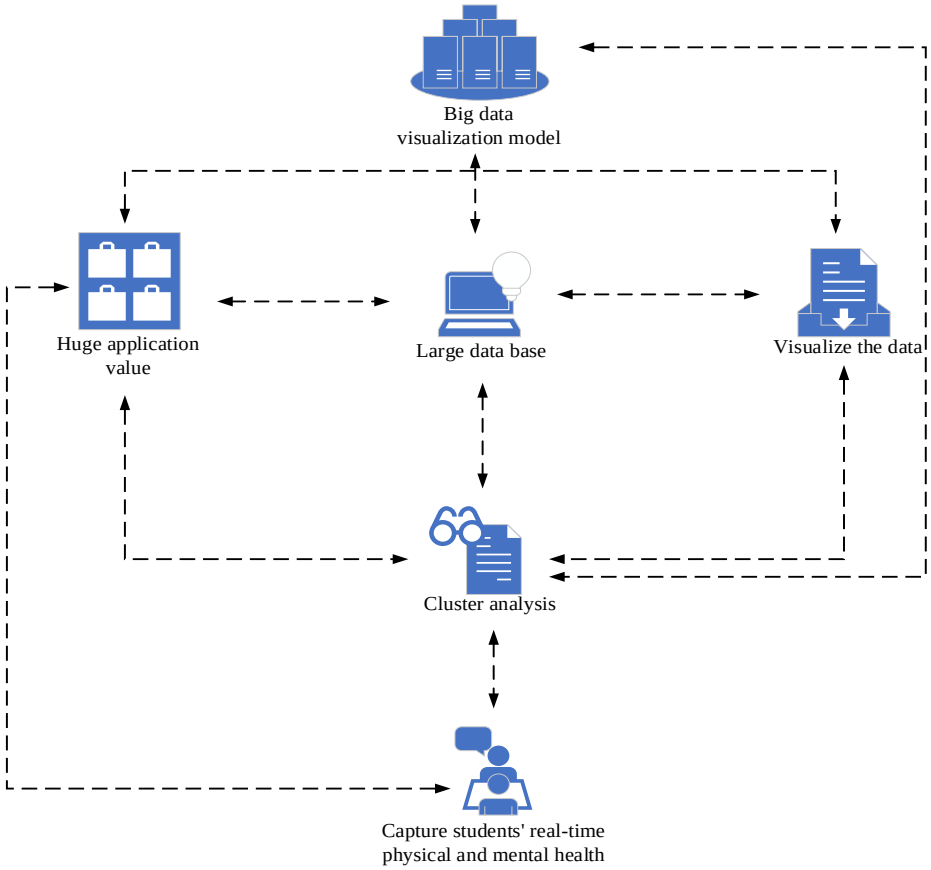

Figure 2. Big data visualization model of student behavior.

4. Design of student behavior monitoring system based on data mining

4.1. System functional requirements evaluation

The student behavior monitoring system based on data analysis is an integrated digital campus engineering system. The whole design process is completed through the secondary development of data resources stored in the original integrated learning and engineering system. The school's integrated learning and engineering system includes student information module, quality development module, comprehensive quality assessment module, system service module, mental health module, daily management module and discipline module. The functions of these modules can fully reflect students' school life, and provide a reliable and accurate theoretical basis for students' education and management. The main themes of the management system include students, thoughts, policies, teachers, etc. The system includes student management, security, logistics management, etc. It covers almost all problems related to school students. It is precisely because of the lack of coordination between the working mechanisms of these departments that student management needs to be included in these functions and the common model of student management needs to be implemented.

The student behavior monitoring system based on data mining uses the integrated learning and engineering system of the original digital campus, realizes the data

sharing function of all enterprise systems and data centers through real-time exchange and delayed exchange, and provides data interfaces for other applications. At the same time, the data exchange between student behavior management systems effectively handles the comprehensive service and management of students throughout the academic cycle of the school. During the system design process, the secondary development based on the original system is carried out. The data mining module is successfully expanded, and the problem behavior of students is tracked, as shown in **Figure 3**.

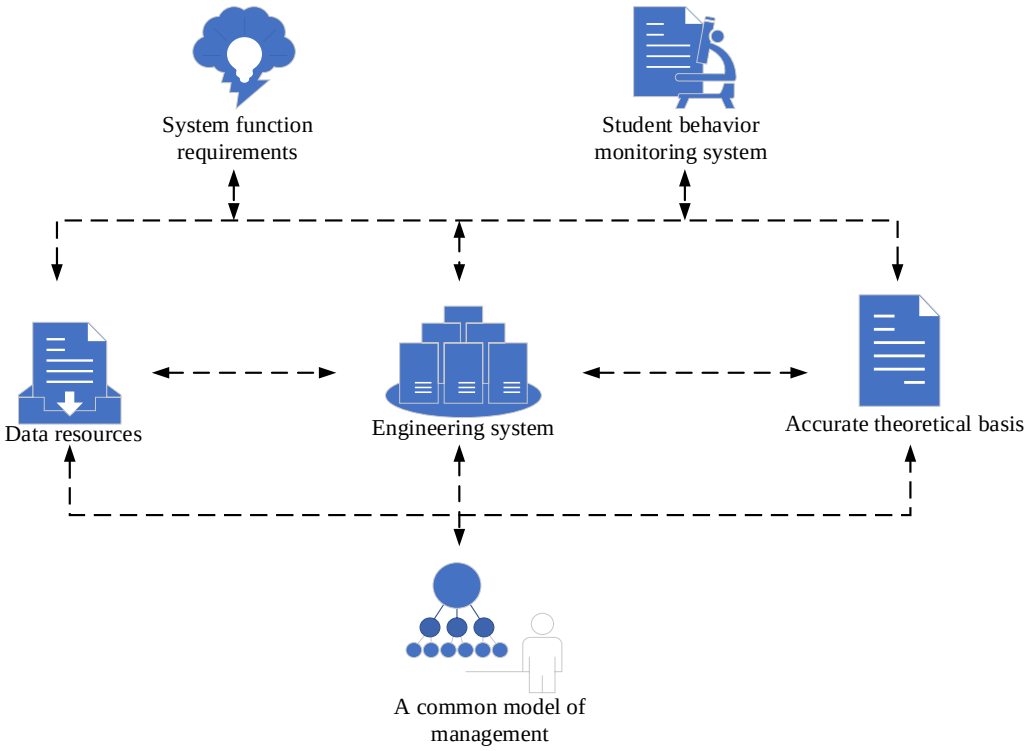

Figure 3. System functional requirements analysis.

The school's integrated learning and engineering system encompasses several key modules:

1) Student Information Module: This module serves as the backbone by collecting and storing fundamental student data such as personal information, contact details, and enrollment status. It ensures that all subsequent modules have access to accurate and up-to-date student information.
2) Quality Development Module: Focused on tracking and enhancing students' academic and personal development. It monitors progress in various subjects, participation in extracurricular activities, and any interventions or support provided. This module feeds into the comprehensive quality assessment, helping to identify areas for improvement.
3) Comprehensive Quality Assessment Module: Utilizes data from the student information and quality development modules to perform detailed assessments of students' overall performance and well-being. It generates reports and insights that are crucial for informing teaching strategies and support services.

4) System Service Module: Facilitates seamless interaction between the various system components. It handles data exchange, user authentication, and access control, ensuring that only authorized personnel can access sensitive information. This module is crucial for maintaining system security and integrity.
5) Mental Health Module: Monitors students' mental health status using data from surveys, psychological assessments, and behavior tracking. It flags potential issues and recommends interventions, such as counseling or support groups. This module works closely with the student behavior monitoring module to address behavioral concerns rooted in mental health.
6) Daily Management Module: Manages day-to-day operations such as attendance tracking, discipline records, and scheduling. It ensures that administrative tasks are efficiently handled, freeing up educators to focus on teaching and supporting students.

The functional requirements of the student behavior monitoring system, based on data mining, leverage the integrated learning and engineering system of the original digital campus. It achieves data sharing across all enterprise systems and data centers through real-time and delayed exchanges, providing data interfaces for other applications. This interconnectedness allows for a cohesive approach to student management, addressing academic, behavioral, and mental health concerns in a unified framework.

4.2. Overall system architecture design

In the general architecture of student behavior monitoring system based on data analysis, the whole architecture is divided into data representation layer, data analysis layer, data storage layer, data processing layer and data source layer. The data analysis layer processes the user's data requirements, and can query and calculate. At this level, the data mining module can study the internal relationship between data and create prediction models. The multidimensional analysis module can provide a multidimensional data management environment for the system. The data storage layer can logically store the data transmitted in the data processing layer according to the protocol [15]. In addition, the storage layer also has a model library that supports intelligent data analysis. The data processing layer can sort, load, retrieve and transform relevant data from different data sources. The data source level is the source of system data generation, which is the campus student card consumption information database, including enterprise management database, student enterprise management database, etc., as shown in **Figure 4**.

In the student behavior monitoring system based on data mining, the data mining system is mainly composed of the following modules: data analysis module, data management module, student comprehensive quality evaluation module and student behavior monitoring module.

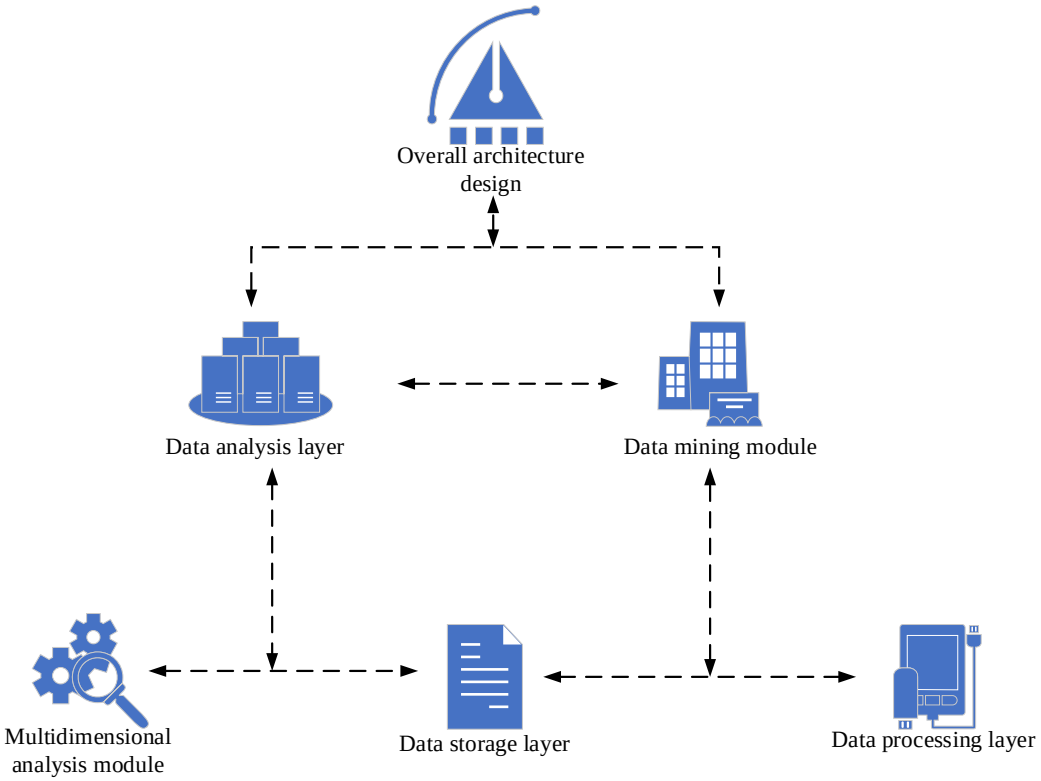

Figure 4. Overall system architecture design.

The system's storage mechanism adopts an efficient data storage architecture, including distributed databases and cloud storage technologies, to ensure efficient storage and access to data. At the same time, the system also implements redundant data backup and disaster recovery mechanisms to prevent data loss and damage. In terms of data security, the system uses a variety of encryption technologies, including SSL/TLS protocols, AES encryption algorithms, etc., to encrypt and protect data during transmission and storage to ensure the confidentiality and integrity of the data. In addition, the system has established a strict data access control mechanism, and only authorized users can access relevant data, effectively preventing illegal access and leakage of data. At the same time, the system also regularly backs up and audits data to ensure data traceability and recoverability. Through the implementation of these measures, the student behavioral health monitoring system can provide users with safe and reliable data storage and access services.

5. Using decision support algorithm to strengthen student health behavior detection

Decision support system is a system that integrates data, complex analysis model and user-friendly interface and can well support semi-structured and unstructured decision-making. Its purpose is to assist management decision-making.

$$p_w = \frac{1}{n}\sum_{i=1}^{x}\sum_{j=1}^{y}(y_{ij} - p\alpha_i(x))\,(y_{ij} - p\alpha_i(x))^t \tag{1}$$

The sample residual value is:

$$p_w = \frac{1}{n(c-1)} \sum_{i=1}^{x} \sum_{j=1}^{y} \sum_{l \neq i} (y_{ij} - p\alpha_i(x)) (y_{ij} - p\alpha_i(x))^t \tag{2}$$

The statistical behavior matrix is:

$$p_w = \frac{np_w + n(c-1)p_\alpha}{n} \tag{3}$$

In order to reduce the residual value and maximize the value of the reconstruction matrix between classes, the maximum standard value is selected:

$$K(p) = \frac{np_w + n(c-1)p_\alpha}{nc} \tag{4}$$

6. Experimental investigation and evaluation based on big data mining and decision support

With the vigorous development of big data mining technology, big data mining technology plays an important role in security management, information security and other fields. With the development of science and technology, the application of big data mining technology in human behavior detection would be further accelerated, but as a new technology, big data mining technology is still in the development stage, and there are certain health risks in students' behavior itself. Based on this, in order to investigate the existing risks in the application of the current student behavioral health monitoring system, this paper conducted a survey of students in three schools, and surveyed 300 students. In the form of a questionnaire survey, students were investigated about the existing problems in the application of the current student behavioral health monitoring system. After investigation, the results can be roughly summarized into four aspects: low accuracy, poor communication, poor coordination, and insufficient information management. The three schools were set as A, B, and C, School A lacks systematic attention to students' mental health and behavior management. The school management, teachers and students have insufficient knowledge of mental health issues and lack effective communication mechanisms and feedback channels. School B has a certain foundation for mental health management and behavior monitoring, but has not yet formed a systematic and comprehensive management system. School C has established a complete mental health management and behavior monitoring system. The school management, teachers and students have a deep understanding of mental health issues and have formed a good communication mechanism and feedback channel. Each school surveyed 100 students, and the proportion of the four questions was shown in **Figure 5**.

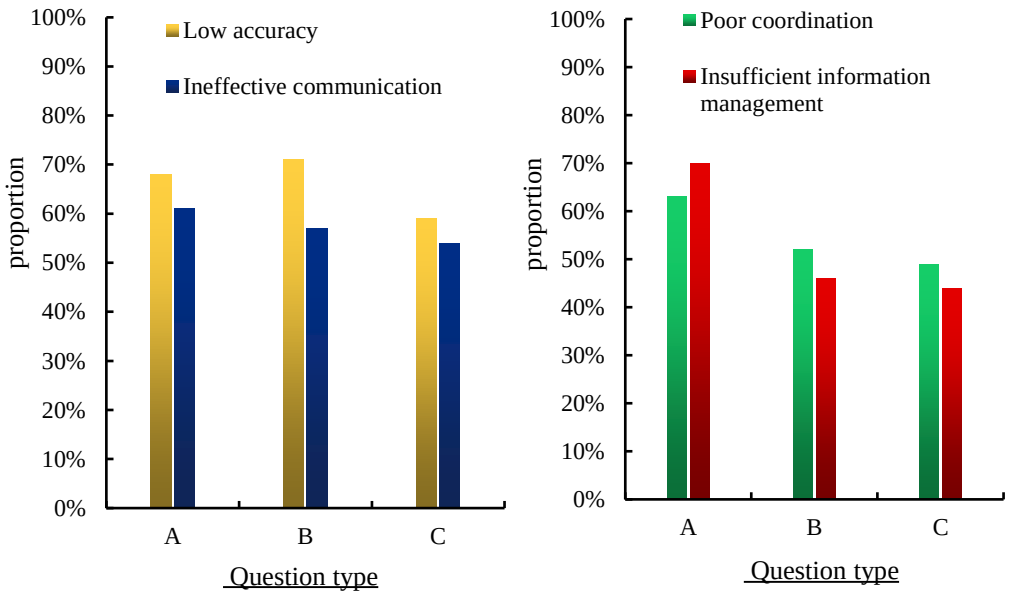

Figure 5. Risks in the application of current student behavior health monitoring system. **(A)** Low accuracy and poor communication; **(B)** Poor coordination and insufficient information management

Figure 5A shows the proportion of 300 students in the three schools surveyed who believed that the current application of the student behavioral health monitoring system had low accuracy and poor communication. **Figure 5B** surveys the proportion of 300 students from three schools who believed that the current application of the student behavior health monitoring system had poor coordination and insufficient information management. From **Figure 5A**, people can see the proportion of students in three schools who believed that the current application of the student behavior health monitoring system had low accuracy and poor communication. Among them, 68% of students in School A had low accuracy in the application of the current student behavior health monitoring system, and 61% had poor communication. The proportion of students in School B who had low accuracy in the application of the current student behavior health monitoring system was 71%, and the proportion of students who had poor communication was 57%. The proportion of students in School C who had low accuracy in the application of the current student behavior health monitoring system was 59%, and the proportion of students who had poor communication was 54%. According to the survey, there were still some deficiencies in the current student behavior health monitoring system, which needed to be improved.

From **Figure 5B**, people can see the proportion of students from three schools who thought that the current application of the student behavior health monitoring system had poor coordination and insufficient information management. Among them, the proportion of students from School A who thought that the current application of the student behavior health monitoring system had poor coordination was 63%, and the proportion of information management was 70%. The proportion of students in School B who had poor coordination in the application of the current student behavior health monitoring system was 52%, and the proportion of students who lacked information management was 46%. The proportion of students in School C who had

poor coordination in the application of the current student behavior health monitoring system was 49%, and the proportion of students who lacked information management was 44%.

Figure 5 shows the main problems encountered by students in schools A, B, and C in the student behavioral health monitoring system. The students in school A had the highest rate of "poor communication skills", reflecting that the system may lack effective communication mechanisms or feedback channels; while school C had the lowest rate of "lack of coordination skills", indicating that its system may be well integrated into school operations. This difference may be due to differences in system resource allocation, management strategies, and understanding of student needs among schools, emphasizing the importance of customized improvements and system integration into school processes.

After investigating the problems existing in the application of the current student behavior health monitoring system, it was found that there were problems such as poor communication and poor coordination in the application of the current student behavior health monitoring system. To this end, in order to understand the systematic problems in the application of the current student behavior health monitoring system, this paper selected three schools to investigate the teachers in three schools, and investigated the problems in the application of the current student behavior health monitoring system by means of questionnaires. The survey results were roughly divided into three points, which were insufficient data analysis, imperfect quality evaluation, and imperfect behavior monitoring. The setting of the three schools in the survey was A, B and C, and 150 teachers were surveyed. The specific survey results were shown in **Table 1**.

Table 1. Teachers' problems in the application of the current student behavioral health monitoring system.

	Insufficient data analysis	Quality assessment is not perfect	Behavioral monitoring is not perfect
A	19	11	20
B	21	16	13
C	26	12	12

It can be seen from **Table 1** that the number of teachers in School A who believed that the data analysis of the problems in the application of the current student behavior health monitoring system was insufficient was 19; the number of people who were not perfect in quality assessment was 11; the number of people who were not perfect in behavior monitoring was 20. The teachers in School B believed that the number of data analysis deficiencies in the application of the current student behavior health monitoring system was 21; the number of quality evaluation imperfections was 16; the number of behavior monitoring imperfections was 13. The teachers in School C believed that the number of insufficient data analysis in the application of the current student behavior health monitoring system was 26; the number of imperfect quality assessment was 12; the number of imperfect behavior monitoring was 12.

Through the above investigation, people can understand the problems existing in the application of the current student behavior health monitoring system. In order to solve the problems existing in the current student behavior health monitoring system,

big data mining and decision support algorithms strengthen the construction of the student behavior health monitoring system and build a new behavior health monitoring system. In order to investigate the practical application effect of the new behavioral health monitoring system, the new behavioral health monitoring system was applied in three schools. A survey was conducted on 150 students from three schools. In the form of questionnaire survey, the students' recognition of the accuracy, communication, coordination and information management of the new behavioral health monitoring system built by using big data mining and decision support algorithms to strengthen the construction of the behavioral health monitoring system was respectively investigated. The recognition peak was 1, and the three schools were set as A, B, and C. The specific effect was shown in **Figure 6**.

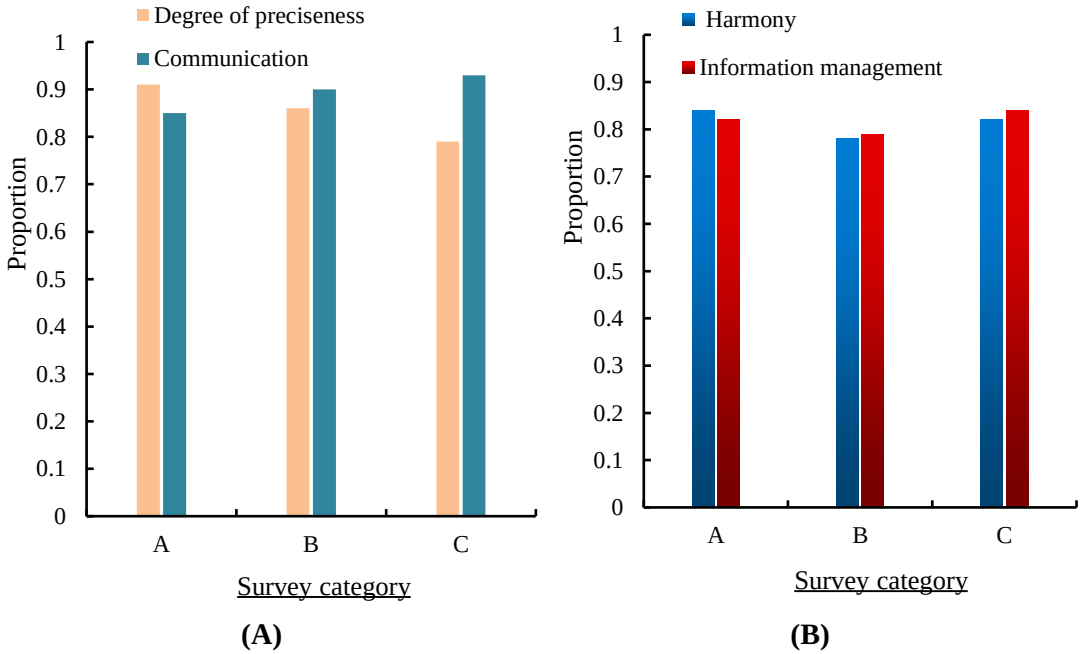

Figure 6. Practical application effect of the new behavioral health monitoring system. **(A)** Accuracy and communication; **(B)** Coordination and information management.

Figure 6A shows the accuracy and communication recognition of 150 students from three schools for the new behavioral health monitoring system, and **Figure 6B** shows the coordination and information management recognition of 150 students from three schools for the new behavioral health monitoring system. It can be seen from **Figure 6A** that the students of the three schools had different recognition of the accuracy and communication of the new behavioral health monitoring system. Among them, the students of School A recognized the accuracy of the new behavioral health monitoring system as 0.91 and the communication recognition as 0.85. The students of School B recognized the accuracy of the new behavioral health monitoring system as 0.86 and the communication recognition as 0.90. The students of School C recognized the accuracy of the new behavioral health monitoring system as 0.79 and the communication recognition as 0.93. It can be seen from **Figure 6B** that the coordination and information management recognition of the new behavioral health monitoring system of the students of the three schools have changed. Among them,

the coordination recognition of the new behavioral health monitoring system of the students of School A was 0.84, and the information management recognition was 0.82. The students of School B recognized the coordination of the new behavioral health monitoring system as 0.78 and the information management as 0.79. The students of School C recognized the coordination of the new behavioral health monitoring system as 0.82, and the recognition of information management as 0.84.

In order to investigate the effect of using big data mining and decision support algorithms to strengthen the construction of student behavior health monitoring system and build a new student behavior health monitoring system, 50 teachers in a school were investigated. After the new student behavior health monitoring system was applied to practice, a questionnaire survey was used to investigate the teachers' satisfaction with the traditional and new student behavior health monitoring system. Satisfaction was satisfactory, average and unsatisfactory, and the specific effect was shown in **Figure 7**.

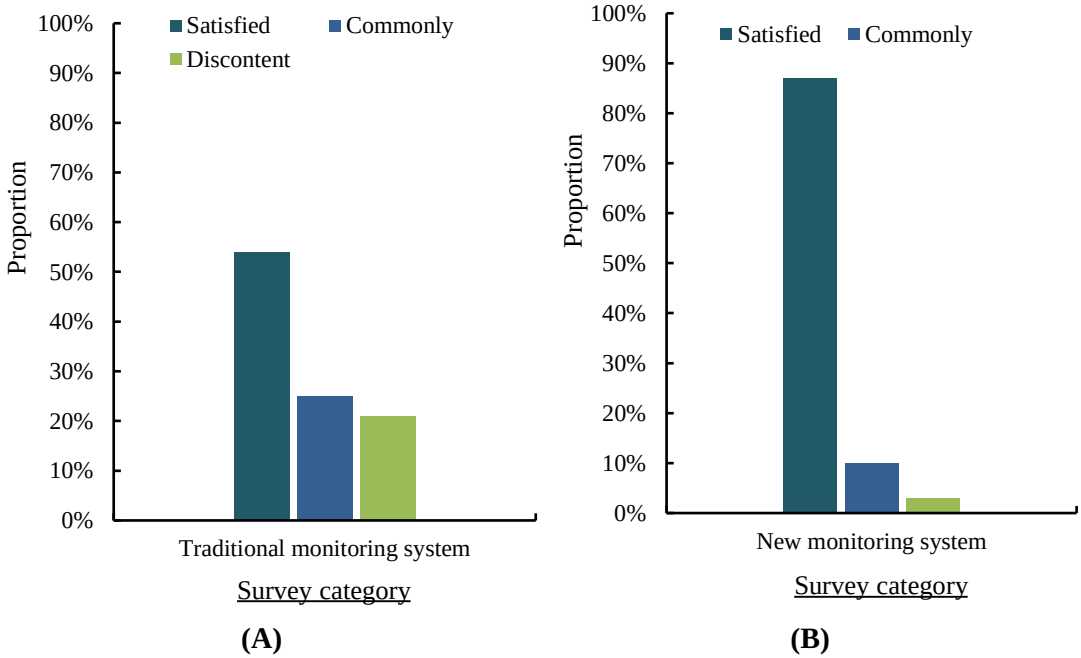

Figure 7. Comparison of teachers' satisfaction with the traditional and new student behavioral health monitoring systems. **(A)** Satisfaction with the traditional student behavioral health monitoring system; **(B)** Satisfaction with the new student behavioral health monitoring system.

Figure 7A shows teachers' satisfaction with the traditional student behavior health monitoring system, and **Figure 7B** shows teachers' satisfaction with the new student behavior health monitoring system. According to **Figure 7A**, teachers' satisfaction with the traditional student behavior health monitoring system was 54%; general satisfaction was 25%; dissatisfaction was 21%. It can be seen from **Figure 7B** that 50 teachers in a school surveyed were 87% satisfied with the introduction of big data mining and decision support algorithms into the structure of the student behavior health monitoring system to build a new student behavior health monitoring system; general satisfaction was 10%; dissatisfaction was 3%. According to experiments and surveys, big data mining and decision support algorithms strengthened the

construction of student behavior health monitoring system, and built a new student behavior health monitoring system, which was 33% more satisfied than the traditional student behavior health monitoring system.

In view of the different foundations and needs of the three schools A, B, and C before the introduction of the student behavior health monitoring system, we put forward the following specific suggestions to help each school better play the effectiveness of the system and promote the all-round and healthy development of students.

For School A, in view of the possible problems of poor communication and insufficient technical support before the introduction of the system, we suggest that the school first strengthen the construction of internal communication mechanisms to ensure smooth information flow between students, teachers, and management. At the same time, the technical support for the system should be increased to ensure the stable operation of the system, and necessary training and guidance should be provided to students to help them familiarize themselves with and master the use of the system. In addition, the school should actively enhance the awareness and attention of all teachers and students to mental health issues, and create a good mental health atmosphere by holding mental health lectures and conducting mental health screening activities.

For School B, although it has a certain foundation for mental health management and behavior monitoring, there are still problems of uneven resource allocation and lack of systematic management. Therefore, we suggest that the school further improve the mental health management and behavior monitoring system on the existing basis, clarify the responsibilities and cooperation mechanisms of various departments, and ensure the effective operation of the system. At the same time, resources should be reasonably allocated according to the actual situation and needs of the school, including technical support, personnel training and funds, to ensure the continuous improvement and optimization of the system. In addition, it is also crucial to establish an effective user feedback channel. The school should collect and process the opinions and suggestions of students and teachers in a timely manner so as to make targeted improvements to the system.

As for School C, although it has achieved remarkable results in the implementation of the system, it still needs to continuously optimize the system to meet the ever-changing needs. We suggest that the school introduce new technologies and new functions to continuously improve the intelligence and personalization level of the system. At the same time, the data collected by the system should be fully utilized for in-depth analysis, potential problems and trends should be explored, and scientific basis should be provided for the school’s decision-making. In addition, School C can also actively share its successful experience and practices with other schools, promote the widespread application and continuous improvement of the student behavior health monitoring system, and provide more students with high-quality mental health services.

In summary, each school should take targeted measures to strengthen the construction and management of the system according to its own actual situation and needs, ensure the effective implementation and continuous improvement of the student behavior health monitoring system, and provide strong guarantees for the comprehensive and healthy development of students.

7. Conclusions

In short, the student behavioral health monitoring system is a system for school administrators to capture students' online health status and behavioral characteristics in real time, objectively and accurately evaluate and analyze students' behavioral health behaviors, and help administrators make correct decisions about the problems that occur in the process of students' growth. It is necessary to take targeted measures to solve the health problems related to students' behavior, eliminate the negative impact of these health problems on students themselves, and cultivate students' good moral quality. The theoretical model of the student health behavior evaluation index system matches with the measurement adaptive data. The scientific construction of the monitoring system is a meaningful health behavior evaluation, but the current evaluation system still has some shortcomings and limitations.

Ethical approval: Not applicable.

Conflict of interest: The author declares no conflict of interest.

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