

Construction of an English-Chinese Bilingual Classroom Platform for Psychology Under the Background of Environmental Health

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ABSTRACT

Due to the growth of China's social economy and culture, the demand for psychology is becoming more and more urgent. Environmental health is the unity of people's behavioral health that constitutes the environment and environmental conditions that meet people's basic needs. In this paper, the improved a priori algorithm is combined with English-Chinese bilingual classroom of university students' psychology. It is based on the collected data and basic information of university students' psychology, which provides ideas for the construction of English-Chinese bilingual classroom and teaching platform of psychology under the background of environmental health. The consistency test results show that the consistency between the proposed algorithm and the manual processing method can reach over 96.5%, that is, the accuracy of the algorithm is over 96.5%. Compared with the traditional a priori algorithm, the improved a priori algorithm has a higher recognition accuracy, with the accuracy increased by 21.36% and the recall increased by 13.99%.

KEYWORDS

A Priori Algorithm, Bilingual Classroom, Mental Health, Network Environment

INTRODUCTION

Psychology developed long ago in Western countries, but it started only relatively recently in China. The study and research of psychology requires reading English literature and texts. It is important, therefore, to employ bilingual teaching for psychology courses (Richmond et al., 2015). With the growth of China's social economy and culture, the demand for psychology is increasing. Many schools have established psychology departments to carry out teaching and research in psychology to meet growing social needs (Qureshi & Moussaoui, 2010). At present, with increased internationalization of education and knowledge, it is the general trend for universities to conduct bilingual teaching in various disciplines. Implementing bilingual teaching promotes world cultural diversity, global economic integration, internationalization of Chinese education, specialization of personnel training,

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and consideration of English learning (Levula et al., 2017). With the rapid development and wide application of network communication technology, portable mobile terminal devices represented by smart phones, tablet computers, and e-readers have gradually become popular. A new communications era is led by digital media from traditional media era with journals, newspapers, radio and television as the main carriers (Mandernach et al., 2012). In psychological well-being education, schools need to actively seek reform and innovation methods, increase the emphasis on the cultivation of students' mental consciousness, give full play to the advantages of the network environment, and build a good educational environment (Kilmartin et al., 2013).

Many English articles of great educational significance to students are included in Chinese textbooks. Although English is taught differently from Chinese, as long as one is willing to study and explore the articles carefully, they can facilitate students' physical and mental development and psychological health. Carefully understanding the connotation of the content of the textbook and correctly analyzing and summarizing the content of the moral education can aid this process; relevant teaching in the English classroom can then guide and shape the direction of students' psychological development, helping students to establish healthy mental qualities. In the process of learning English, students may encounter various problems that affect their psychological state. For example, some students, due to the gradual deepening of the English knowledge system in high school, find the difficulty of learning gradually increases. As a result, students cannot always maintain the best learning state. Therefore, we need to help students with a new teaching method, to encourage them to explore their own inner learning potential, so as to stimulate their confidence and patience in learning. This will ensure that students can maintain the best psychological state, with a positive mindset for study.

Health refers specifically to the nature or quality of the specific living environment that affects the individual's psychology, and it is the degree to which the environment that directly acts on the individual's psychology can promote their psychological development and psychological well-being (Biswas-Diener & Patterson, 2011). The emergence of the network environment has brought about a vastly different living environment for human beings (Richmond et al., 2014). Today, social networks have been integrated into people's work and study, and have become an indispensable factor in life. Social networks also have a great influence on university students' study and life. While health corresponds to psychological well-being (Mitchell et al., 2016), environment refers to the surroundings in which a person lives, mainly including material and interpersonal conditions. Productive research into psychological well-being education within the network environment and constantly improving the English-Chinese bilingual psychology classroom have become important issues for universities (Rutter, 2005). To ensure the healthy growth of Chinese psychology, we must seek effective methods and approaches. This paper combines the improved a priori algorithm with the English-Chinese bilingual psychology classroom and analyzes some rules and characteristics of university students' psychological related factors from the results.

As a special group, university students not only have differences in their psychological makeup, but they also have unique external environments. As compared with students in the past, today's university students are more intelligent and sensitive to many things in society (Coombs et al., 2003). The degree of environmental health directly affects the individual's psychological well-being, and in a healthy living environment, a person can better meet his basic needs, generate high-level self-realization needs, and is more likely to establish positive social relations with others and form good social communication (Langeland et al., 2003). The network environment brings both positive and negative influences to students' study and life, and it also brings challenges to students' psychological well-being. This paper analyzes the path of English-Chinese bilingual classroom construction of psychology under the background of environmental health, giving full play to the positive role of the network and enhancing the effectiveness of students' psychological well-being education. The main research innovations are as follows:

- (1) Based on the collected data and basic information of university students' psychological evaluation, this paper analyzes the characteristics of university students' psychological related factors from the results.
- (2) In this paper, an a priori algorithm is used to predict the test data set, and the internal relationship between psychological well-being problems and attributes is analyzed, which provides a new idea for the construction of an English-Chinese bilingual psychology classroom under the background of environmental health.

The research brings new ideas for the development of bilingual English-Chinese psychology classrooms in the context of environmental health. The a priori algorithm is utilized to predict test data sets and analyze the connections between mental health problems and English attributes. In education, students' physical and mental health is paramount. As the new curriculum reform is promoted, the importance of students' mental health is increasingly recognized. Society's demand for emerging talent now extends beyond knowledge and skills and includes good psychological qualities. Incorporating mental health education into English teaching can help students improve their cognitive, emotional, and volitional abilities during classroom learning, thus fostering good mental health.

This article shows how to integrate the concept of environmental health into the design and implementation of bilingual psychology classes in English and Chinese to promote students' mental health and social adaptability. This article provides an idea for constructing an English-Chinese bilingual classroom platform for psychology, including course objectives, content, methods, evaluation, and other aspects, providing a reference for similar courses in other countries and regions.

RELATED WORK

When we talk about environmental health, we are referring to the state of human behavior as well as the surroundings and circumstances that allow us to meet our basic needs. Working across disciplines is necessary for environmental health research and education, and psychology is no exception. Psychology is a branch of science that focuses on mental and emotional processes and human behavior. As such, it can support environmental health issues theoretically and methodologically. The development of psychological teaching methods and resources in relation to environmental health is examined in this article from the standpoint of bilingual education. The use of two languages as instructional resources to enhance students' language proficiency and professional knowledge is known as bilingual teaching. In addition to fostering interdisciplinary communication and integration, bilingual education helps students develop their cross-cultural communication abilities and global perspectives. In the discipline of psychology, bilingual education can broaden the application and research perspectives of psychology while assisting students in comprehending psychological theories and phenomena from various cultural backgrounds. The level of bilingualism among teachers, the choice and organization of textbooks, and the development and assessment of instructional strategies are some of the obstacles and difficulties that bilingual education must overcome. Establishing corresponding teaching technologies and platforms to support bilingual teaching and learning for teachers and students is essential for the effective implementation of bilingual education. The needs and features of psychology as well as the history and objectives of environmental health should be considered in these technologies and platforms.

English education should consider all students, promote the cultivation of students' emotional attitudes, stimulate students' interest in learning, and help students build self-confidence. Whether a student's answer is correct or not, teachers must give timely evaluation. The cultivation of teachers' innovative abilities, attitudes, psychological qualities, self-confidence and other qualities cannot be separated from the inclusion of mental health education in subject teaching. Therefore, it is important to incorporate mental health education in English teaching. However, memorizing words, grammar, practicing oral English, and reading English articles all require students to have strong willpower. In

the process of learning English, students will certainly encounter many difficulties, which requires students to have a good ability to withstand setbacks. English, a complex and comprehensive subject, must be combined with mental health education. The degree of environmental health directly affects the individual's psychological well-being. Pastor (2009) pointed out that under the impact and influence of the internet, great changes have taken place in the form, content and organizational mechanism of psychological well-being education, and the traditional psychological well-being education model has struggled to adapt to the enormous challenges brought by the internet to college students' psychological well-being. Sebastian (2017) states that in the network, the content of psychological well-being education for university students changes from flat to three-dimensional, from static to dynamic.

In order to carry out mental health education in colleges and universities, the primary task is to have a comprehensive understanding of students' mental health status, by which psychological assessment is the most direct and effective method. However, most of the existing psychological assessment systems are limited to traditional information management, which are unable to analyze and mine the data in depth and reveal the potential relationship between the data. With the help of association rule mining technology, the correlation between different psychological assessment data can be discovered from these massive data, which can provide a scientific basis for schools to further improve and refine mental health education to better meet students' needs. Malik et al. (2021) established a psychological well-being evaluation model with C4.5 algorithm and constructed a decision tree to predict psychological well-being. Happell et al. (2015) added the evaluation index of interest to the traditional a priori algorithm and explored the relationship between the data of different psychological assessment scales of students. Griggs (2013) believes that the service objects and contents of psychological well-being education are diversified, not only for the health care and promotion of psychological well-being and psychological development, but also for study and life counseling and career and academic choice guidance. Goozee et al. (2016) used the C4.5 algorithm to generate decision trees and used a new pruning algorithm to improve the effectiveness and accuracy of the derived rules.

Oral expression is a crucial teaching strategy in English education, particularly for students. Students are individuals with unique characteristics. To increase student participation, the author incorporates a range of strategies into the classroom design, including group competition, individual response, and group cooperation. Students can act out their individual traits through a variety of activities. Students' subjectivity is respected, they are shown empathy and respect, and their confidence and sense of self-worth can be encouraged in such a setting. Students' optimistic and upbeat mental states will be sustained as they achieve greater and greater success, providing the groundwork for mental health. Currently, research on the application of data mining (DM) technology in students' psychology mainly focuses on the research of mental DM algorithms, while less research has been conducted on the application of mental DM in the construction of psychological teaching classrooms. Based on these conditions, this paper uses an a priori algorithm to predict the test data set, analyzes the internal relationship between psychological well-being problems and attributes, and explores the path of English-Chinese bilingual psychology classroom construction of under the background of environmental health.

METHODOLOGY

The mental health of college students not only affects their own learning and life, but also directly affects the quality of talent cultivation in China's higher education and determines China's position in international competition. China vigorously promotes bilingual teaching to introduce advanced teaching resources, methods, and concepts; to explore the bilingual teaching mode that best meets China's circumstances; to continuously improve the quality of teaching in colleges and universities; and to enable students to master cutting-edge knowledge of their disciplines and come into contact with the world's advanced technology and scientific ideas (Perry et al., 1996). The development

of psychological counseling embodies the promotion of students' healthy physical and mental development, including the promotion of the growth of students' sound thinking and psychological adaptability, so as to improve their self-esteem, enhance their ability to withstand setbacks, cultivate their social skills, and learn to reasonably utilize their time outside of class in order to fully develop their various potentials.

Significance of English Chinese Bilingual Psychology Classroom Construction Under the Background of Environmental Health

University Students' Psychological Education in the Network Environment

The online environment has produced a qualitative change in the mental health of college students and has been considered; as a result, the difficulty, depth and breadth of psychological well-being are also greatly improved. University students' psychological well-being education and ideology education are interrelated and inseparable. The foundation of thought and the growth of ideas are influenced and restricted by psychology. Problems are not only influenced by values, moral concepts, environment and other factors, but are also caused by psychological factors (Mahalik et al., 2013). Combining the internet with psychological well-being education on the basis of psychology-related theories can enrich the content and expand the ways of psychological well-being education while promoting the harmonious growth of university students' individual and society and helping educators realize the importance of psychological well-being education, so as to actively combine ideology education with other disciplines to form an interactive mechanism.

English-Chinese Bilingual Psychology Classroom Construction

Psychology not only summarizes the findings of the various subdisciplines, but also generalizes the universal laws of psychology. Psychology is not explicitly included in the national bilingual teaching model course construction program. However, based on the history, reality, and future of the development of psychology in China, conforming to international methods of psychology development and keeping up with the latest research in the discipline, psychology is well suited for bilingual teaching and is also in urgent need of bilingual teaching (O'Neil & Renzulli, 2013). Due to the late start of psychology research in China and challenges in the development process, there is still a gap between the development of psychology in China and other countries. In order to reach a desired level and occupy a place in the international psychology community, Chinese psychology needs to learn from excellent research experience, research methods, research theories, technical means and equipment; it must also strengthen the international academic exchanges and cooperation in psychology, which puts forward high requirements for the scientific research literacy, foreign language proficiency, and academic foreign language foundation of psychology teaching and research personnel, making the development of bilingual teaching of psychology an imperative.

According to the theory of constructivism, teachers play a dominant role in English teaching. While students are the main body of learning, teachers should provide certain help to guide students to learn. Therefore, building a harmonious teacher-student relationship is important to provide ideas for teachers to use teaching methods creatively. Strengthening theoretical research on the selection of university science teaching methods is of substantial significance to the improvement of the quality of university science education. Scientific teaching plays a very important role in the development of college students. The rational teaching of university science can help students to enhance their innovative abilities. This requires teachers to apply effective methods to teaching in order to improve the effect of teaching science in primary schools. First, harmonious teacher-student relationships can help teachers and students treat each other equally and stimulate students' interest in learning. Teachers should allow students freedom to the greatest extent and eliminate all unfavorable factors irrelevant to learning as far as possible. Second, learning English requires constant practice. In English classes, students need to speak English boldly, use English, learn in practice, and accumulate experience, so as to improve the practical application of English. An harmonious teacher-student relationship

requires teachers to point out students' mistakes in an appropriate manner, guide students to correct them, and encourage students to practice English rather than criticize students for their mistakes.

DATA WAREHOUSE TECHNOLOGY AND STUDENTS' PSYCHOLOGICAL DM

The warehouse data is mainly used for decision-making analysis of enterprises, and the data operations involved are mainly data query, which is usually not modified (Moniz-Cook et al., 2011). The typical data warehouse architecture environment is a four-tier structure from operational data, to global data warehouse, to departmental data warehouse, and finally to personal computing environment. The data flow can be either top-down or bottom-up. Figure 1 describes the data warehouse architecture.

Combining the analysis of mental problems with DM technology to study allows for finding the hidden regularity in a small amount of data of psychological well-being problems, which is an effective means to improve the science of school psychological well-being education. The purpose of DM systems is to find out the association rules with minimum support and minimum credibility from the database. After obtaining the data, it needs to go through data pre-processing, mining, and additional processing, in order to output the required information. The whole process of knowledge discovery is shown in Figure 2.

Figure 1. Data Warehouse Architecture

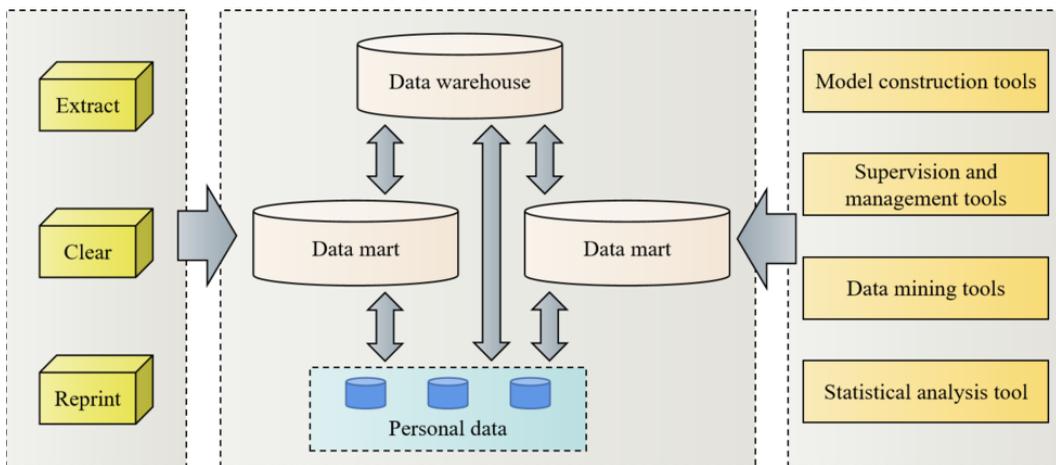
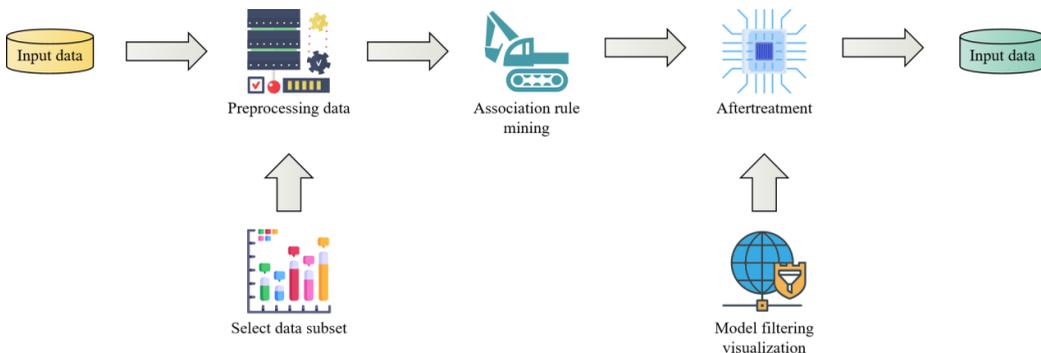


Figure 2. Knowledge Discovery Process



Assume that all the students to be mined are:

$$X = \{x_1, x_2, \dots, x_n\} \quad (1)$$

x_k ($k = 1, 2, \dots, n$) is often characterized by a limited number of parameter values, and each parameter value describes a certain feature of x_k . The student x_k is accompanied by a vector:

$$P(x_k) = (x_{k1}, x_{k2}, \dots, x_{ks}) \quad (2)$$

Among them, x_{kj} ($j = 1, 2, \dots, s$) is the assignment of x_k on the j -th feature, and $P(x_k)$ is called the feature vector or pattern vector of x_k . Association rule mining divides X into c fuzzy subsets X_1, X_2, \dots, X_c , and the membership function of the sample is an $c \times n$ fuzzy matrix U belonging to the $[0, 1]$ interval:

$$U = \begin{bmatrix} u_{11} \\ u_{21} \\ \dots \\ u_{c1} \end{bmatrix} = \begin{bmatrix} u_{11} \dots u_{1n} \\ u_{21} \dots u_{2n} \\ \dots \\ u_{c1} \dots u_{cn} \end{bmatrix} \quad (3)$$

The technical structure of real-time interaction and asynchronous transmission on the internet has completely changed the relationship between the disseminator and the receiver of information (Pottinger et al., 2021). The data mining process of this study includes the steps of data collection, data pre-processing, feature selection and extraction, and mining algorithm implementation. First, the design of the psychological assessment questionnaire and data collection were conducted in the student population, and the participants' personal information and psychological assessment data were recorded and saved in the SQL Server 2005 database for subsequent data processing and analysis.

Next, data pre-processing was performed to ensure the accuracy and completeness of the data. By connecting to the server through a client application development platform (e.g., Delphi), the required data were extracted from the database and the extracted data were cleaned, including removing duplicates, dealing with missing values and outliers, and so on. This ensures the reliability and validity of the subsequent mining process.

After the data pre-processing is completed, the step of feature selection and extraction is conducted. According to the objectives and questions of the study, appropriate feature extraction methods are selected to extract features related to the psychological state of college students from the raw data. For example, according to the questionnaire data, the answers to certain questions can be extracted as features.

Finally, after the completion of data pre-processing and feature selection and extraction, the corresponding data mining algorithm is implemented.

STUDENT PSYCHOLOGICAL WELL-BEING MODEL BASED ON A PRIORI ALGORITHM

The a priori algorithm is a commonly used method for mining frequent item sets in a dataset. Its goal is to find the largest set of frequent item sets that meet a certain support threshold. It works in

an iterative manner by first finding all frequent item sets of size 1 (i.e., individual items) and then using these frequent item sets to generate candidate item sets of size 2. These candidate item sets are then filtered based on their support, and the process continues until no more frequent item sets can be found. In the context of the paper, the a priori algorithm was improved and used to analyze data collected from university students' bilingual psychology classes. This analysis provided insights into the relationships between different topics taught in the class and helped inform the development of a bilingual psychology classroom platform. The improved a priori algorithm had higher recognition accuracy and recall rates compared to the traditional a priori algorithm, demonstrating its effectiveness in mining frequent item sets from the dataset.

Learning psychology means that the learning situation has an important influence on the psychological state, and the change of psychological state will also affect students' academic performance. With the growth of psychological well-being education, in addition to paying attention to students' mental problems, it is also necessary to guide students to study purposefully in combination with their mental conditions. The framework of the algorithm for identifying students' psychological well-being problems based on DM is shown in Figure 3.

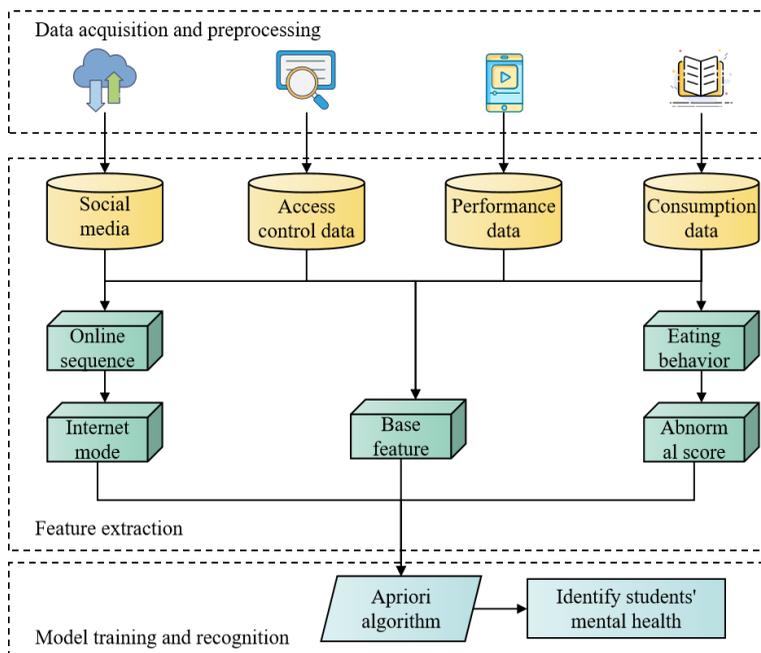
The sample information of a university student is recorded as a 12-dimensional coordinate point, and all the data information is the set of A_i :

$$A_i = (x_1, x_2, x_3, \dots, x_{12}) \tag{4}$$

The value range of one of the x_i items is limited to perform correlation mining analysis for other factors after a certain factor ($mj1$) is determined. Make

$$x_2 = mj1 \tag{5}$$

Figure 3. Identification of Students' Psychological Well-Being Problems Based on DM



Obtain the survey data set of university students:

$$f = \sum_i (A_i | x_2 = mj1) \tag{6}$$

Different types of psychological information can be obtained by setting other conditions; alternatively, two conditions (*mj1* and *gd0*) or multiple conditions can be set at the same time to make more restrictions, thus reducing the dimension of space. For example, if x_2 and x_3 are set at the same time, the survey data can be obtained:

$$f' = \sum_i (A_i | x_2 = mj1 \cap x_3 = gd0) \tag{7}$$

On this basis, by limiting x_3 again, we can obtain:

$$f' = \sum_i (A_i | A_i \in f \cap x_3 = gd0) \tag{8}$$

By simply limiting the information processing, the survey space can be reduced, and then the data can be mined by using algorithms. The use and maintenance of any system is a long-term process and an arduous project, in which the use and maintenance of the system are interrelated and mutually reinforcing. In addition, the maintenance process includes cleaning up garbage data, processing historical data, and updating system data.

The a priori algorithm based on a matrix is used to find frequent item sets and association rules among psychological factors. According to the obtained rules, potential relationships between psychological factors and students' basic information is analyzed. At the same time, the obtained decision tree model is used to classify and predict new data, thus providing scientific and objective decision-making basis for university students' psychological counselors. The adjustment method of students' psychological well-being based on the a priori algorithm is shown in Figure 4.

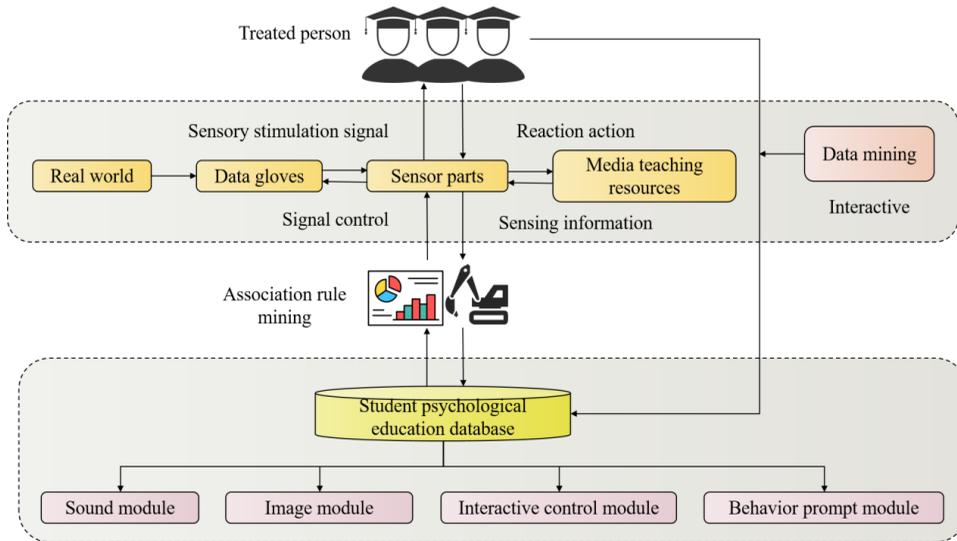
Let D be a training sample set containing class labels, and the class label attribute has m different attribute values, which are correspondingly defined as m different class c_i . $c_{i,D}$ is the sample set of the c_i class in the training sample set D , $|D|$ is the number of samples in D , and $|c_{i,D}|$ is the number of samples in $c_{i,D}$. The expected values required for sample classification in D are:

$$Info(D) = -\sum_{i=1}^m \frac{|c_{i,D}|}{|D|} \log_2 \left(\frac{|c_{i,D}|}{|D|} \right) \tag{9}$$

$Info(D)$ is used to measure the level of chaos in the system. The discrete values are:

$$A = \{a_1, a_2, \dots, a_v\} \tag{10}$$

Figure 4. Adjustment Method of Students' Psychological Well-Being Based on a priori Algorithm



The training sample set D is divided by attribute A , then D is divided into v subsets. The value of the sample in the D_j on the attribute A is the value a_j . These subsets correspond to several branches of D . From that we determine:

$$Info_A(D) = \sum_{j=1}^v \frac{|D_j|}{|D|} \times Info(D_j) \quad (11)$$

Find the amount of entropy reduction due to attribute A :

$$Gain(A) = Info(D) - Info_A(D) \quad (12)$$

The information gain rate of attribute A is defined as:

$$GainRatio(A) = \frac{Gain(A)}{SplitInfo(A)} \quad (13)$$

$SplitInfo(A)$ represents the information produced by the plan by dividing the training sample set D into v outputs corresponding to the attribute A test:

$$SplitInfo_A(D) = -\sum_{j=1}^v \frac{|D_j|}{|D|} \log_2 \left(\frac{|D_j|}{|D|} \right) \quad (14)$$

The centralized data table has a large amount of data from multiple data tables, and there are more or less null data, noisy data, or inconsistent data, which will affect the research results to a certain extent. Therefore, data cleaning should be conducted to decontaminate the data before DM (Harmon & Hills, 2015). Before DM, the data in the data set should be converted into a data form suitable for DM. By collecting a great quantity of related data of students' psychological well-being problems, an effective psychological well-being intelligent analysis system should be established, which can relieve the pressure of psychological well-being tutors and improve their work efficiency, and can actually improve reliable solutions for university students with mental health concerns.

In order to effectively combine the algorithm processing of data mining technology with the Oracle database, this design is developed using the Larravel development framework. Larravel is an open-source PHP(Hypertext Preprocessor) framework that is powerful and easy to understand. The Larravel development framework follows the model view controller design pattern (MVC). Larravel reuses existing components from different frameworks, which helps create web applications. The web application designed in this way is more structured and practical. Larravel is completely open source. All code can be obtained from GitHub. The Larravel framework is based on MVC architecture, and its structure is shown in Figure 2. Users can send user requests to the controller through routing. The controller receives data from the database through the model and updates the data to the view, which responds to user requests. The purpose of this platform is to provide college students with a platform for prevention and treatment that can assess their mental health in real time. College students are in a transitional period of life, and it is necessary to give them the correct psychological guidance timely and appropriately. Good mental health is important as enter into adulthood and independence. It is hoped that the establishment of this platform will promote the prevention and treatment of college students' psychological problems and actively guide the mental health of high-end talent in the future.

RESULTS ANALYSIS AND DISCUSSION

The a priori algorithm can generate frequent item sets and filter effective association rules by setting the minimum support threshold and minimum confidence threshold. However, the traditional association rule evaluation methods still have some limitations. In order to further evaluate the effectiveness of association rules, some scholars have proposed a rule interest measure, which utilizes the sufficiency factor of the subjective Bayes method in uncertain reasoning. Integrating the interest evaluation into the traditional association rule evaluation system can improve the accuracy and effectiveness of association rules.

The main reason for improving the a priori algorithm is its high computational complexity and memory consumption. The original a priori algorithm needs to scan the dataset several times and generate all possible subsets of the candidate item set, resulting in low efficiency. To solve this problem, researchers have proposed various improvements. Pruning strategies reduce the number of candidate item sets by scanning the transaction database layer by layer and thinning the data when the a priori property is not satisfied to avoid generating invalid candidate item sets. The compressed storage scheme optimizes the storage of frequent item sets, such as using bitmap compression techniques and bitwise operations, to reduce memory consumption and accelerate support counting and candidate item set generation. In addition, sampling and partitioning methods can process large-scale datasets and reduce the computational complexity of the a priori algorithm. These improvement methods effectively increase the efficiency and performance of the a priori algorithm and make it more suitable for practical data mining applications. The data are derived from a survey of psychological measurement among students in English and Chinese bilingual psychology classrooms. The data collected in the survey can be processed and analyzed using an improved a priori algorithm and a traditional a priori algorithm to obtain the required results, as well as relevant data tables and charts. For psychological well-being testing and monitoring, a great quantity of psychological measurement results can be collected. The DM algorithm is used

to comprehensively analyze these data to find the main factors that lead to university students' psychological problems. By clustering data sets to find groups, we can find the distribution of data sets, so as to identify abnormal points. Clustering can not only find outliers, but also clearly identify the value range of each attribute through clustering, so that the characteristics of outliers can be judged. The improved a priori algorithm is applied to the analysis of students' psychological well-being data, and the mining results are compared with the traditional a priori algorithm. Table 1 and Figure 5 show the teachers' subjective rating data of the algorithm.

The a priori algorithm, a classical mining algorithm in association rules, can be used for data mining and yields a great deal of useful information when compared to the traditional algorithms. Further rules, such as the connection between poor students' mental health, can be uncovered in addition to the relationship between mental health factors such as the connection between mental health and family. It actively directs the efforts of mental health educators. Most raters said that the improved a priori's psychological data analysis method can effectively reflect students' psychological situation. In manual processing, in order to reduce the influence of subjective factors, multiple teachers in the same data set are evaluated at the same time, and the average value is taken as the final result. The consistency of the results obtained by manual and algorithm processing methods is used as the standard of algorithm performance evaluation, and the specific comparison results are shown in Table 2.

Table 1. Teachers' Subjective Rating

Resource Quantity	Improved a priori Algorithm	Traditional a priori Algorithm
10	69.7	62.4
20	66.9	64.2
30	70.7	61.5
40	71.7	67
50	85	67.1
60	71.9	67.6
70	86.9	68.8
80	86.6	69.5

Figure 5. Teachers' Subjective Rating

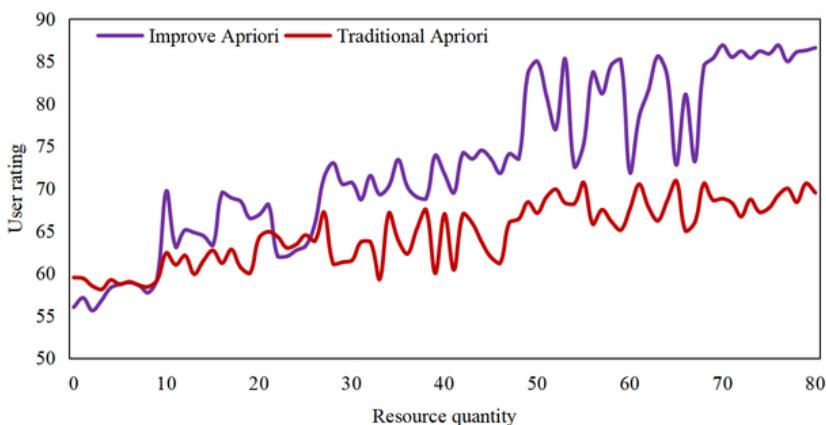


Table 2. Algorithm Consistency Evaluation Results

Data Set	Consistency (%)
1	95.89
2	93.24
3	94.35
4	95.69
5	95.76
6	97.28

The results show that the consistency between the proposed algorithm and the manual processing method can reach above 96.5%, that is, the accuracy of the algorithm is above 96.5%, which shows that the improved a priori algorithm in this paper has good performance. The results show that the algorithm can complete the evaluation process of students' psychological well-being education in the English-Chinese bilingual psychology class with high accuracy.

There are usually some abnormal records such as differences and extremes in the data in the database, so it is important to detect the deviation of the data. Figure 6 shows the error comparison between the improved a priori algorithm and the traditional a priori algorithm when selecting different sparsity. Some outliers may be caused by experimental errors or data input errors, and these outliers can be deleted directly.

Table 3 shows the changes of the accuracy of the psychological data analysis model of students in English-Chinese bilingual psychology classroom when the a priori algorithm sets different iteration times. Six groups of data with iteration times ranging from 1,500 to 8,000 were selected to observe the change of model accuracy.

It can be seen that after many iterations, the accuracy of the algorithm for analyzing students' psychological data in an English-Chinese bilingual psychology classroom has gradually improved and tends to be stable. In the transaction processing environment, users' behavior is characterized by high frequency of data access and short time for each operation. The response time of the algorithm under different data input conditions is shown in Figure 7.

Figure 6. MAE Comparison of Algorithms

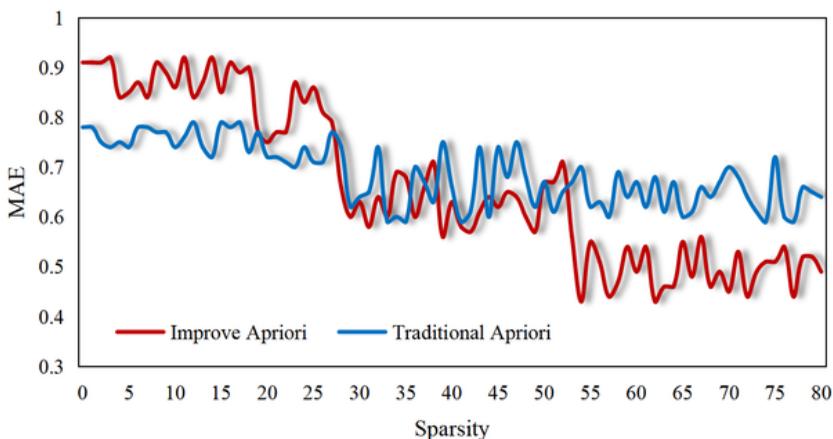
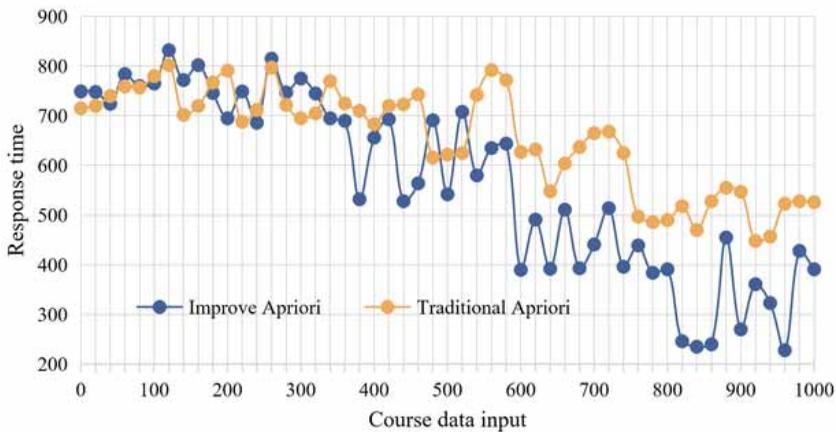


Table 3. Accuracy of Model With Different Iteration Times

Iterations	Accuracy Rate
1500	32.1%-66.9%
2500	41.1%-70.8%
3500	60.4%-72.6%
5000	71.7%-83.5%
6500	80.2%-90.1%
8000	81.1%-90.8%

Figure 7. Response Time of Algorithm



Compare the predicted class learned by the detection tuple in the recognition model with the known class label, and if they are the same, the recognition is successful. The accuracy rate of students' psychological recognition with improved a priori algorithm is shown in Figure 8. The recall rate of students' psychological recognition based on the improved a priori algorithm is shown in Figure 9.

The results show that the recognition accuracy of the improved a priori algorithm is higher, and compared with the traditional a priori algorithm, the recognition accuracy is increased by 21.36%, and the recall rate is increased by 13.99%. The study of environmental health can change the focus of psychological well-being education from individual to individual and environment, and make educators change from paying too much attention to individual psychological well-being problems to paying attention to the relationship between individual psychological well-being and their living environment. By analyzing the internal relationship between psychological well-being problems and attributes, this paper provides a new idea for the construction of English-Chinese bilingual psychology classrooms under the background of environmental health.

CONCLUSION

In order to provide ideas for the construction of an English-Chinese bilingual psychology classroom and teaching platform in the context of environmental health, this paper combines the improved a priori algorithm with the English-Chinese bilingual college psychology classroom. The enhanced

Figure 8. Accuracy Results for Different Algorithms

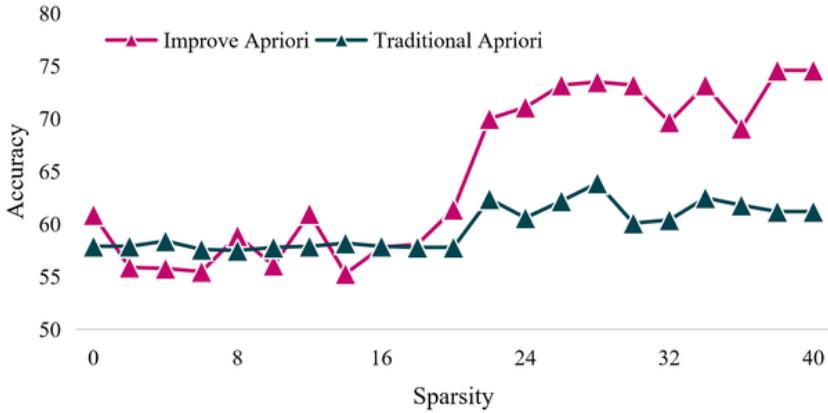
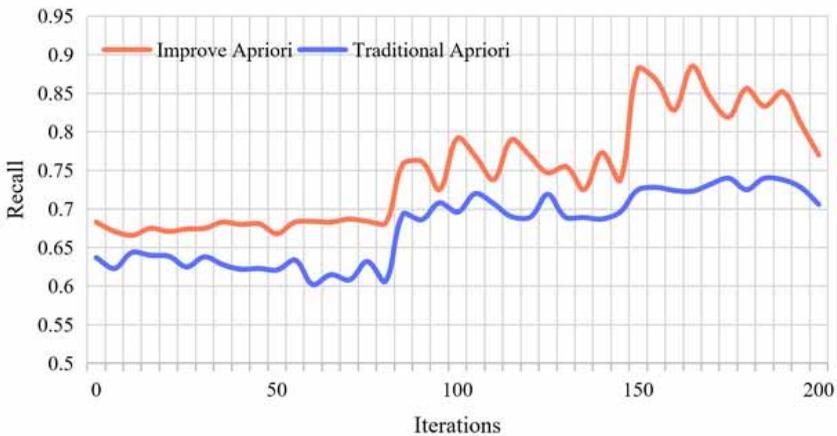


Figure 9. Recall Results for Different Algorithms



a priori algorithm has better recognition accuracy than the conventional a priori algorithm. The accuracy and recall rates rose by 21.36% and 13.99%, respectively. The findings demonstrate that, in an English-Chinese bilingual psychology classroom, the algorithm is capable of accurately completing the evaluation process of students' mental health education. The algorithm used to analyze student psychological data in an English-Chinese bilingual psychology classroom has improved and stabilized after going through a number of iterations. Research on environmental health may cause mental health education to move from an individual to an environment-centered approach. In the context of environmental health, a novel concept for the design of an English-Chinese bilingual psychology classroom is offered by examining the internal relationships between mental health issues and characteristics. The subject matter of mental health education is intricate. When incorporating it into our classroom instruction, it is important that we accurately grasp its meaning and implications. This is the only way we can effectively direct students' psychological education. This article demonstrates how to incorporate the idea of environmental health into bilingual psychology courses in both Chinese and English so as to support students' social and mental development. This article offers guidance for developing a bilingual psychology classroom platform that is conducted in English and Mandarin. It covers course objectives, content, methods,

evaluation, and other relevant areas. This can serve as a model for courses of a similar nature being offered in other regions and nations.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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