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Retraction

Retracted: Evaluation of the Effect of Ideological and Political Education on Psychological Crisis Intervention for University Students Based on Data Mining Algorithm

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope

(2) Discrepancies in the description of the research reported

(3) Discrepancies between the availability of data and the research described

(4) Inappropriate citations

(5) Incoherent, meaningless and/or irrelevant content included in the article

(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] H. Yao and M. D. H. A. Malek, "Evaluation of the Effect of Ideological and Political Education on Psychological Crisis Intervention for University Students Based on Data Mining Algorithm," *Journal of Mathematics*, vol. 2021, Article ID 9504247, 8 pages, 2021.

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Research Article

Evaluation of the Effect of Ideological and Political Education on Psychological Crisis Intervention for University Students Based on Data Mining Algorithm

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The mental health level of university students not only directly affects their own growth, but also affects the stability of the campus, which in turn affects the harmony of society and the improvement of the quality of all people. The combination of ideological education and mental health education is an important educational project in contemporary universities. To enhance the quality of psychological health education of college students can promote the overall development of students' comprehensive quality; the two are closely integrated together, so as to successfully promote the effective combination of ideological education and psychological education, thus realizing the role of ideological education and psychological health education in promoting the physical and mental health development of contemporary college students. This paper explains the technology of data mining and the current situation of the psychological impact of Civic Education on college students and analyzes in depth the feasibility of introducing data mining technology in Civic Education to intervene in the psychological crisis of college students. The results show that the application of the technology provides a new idea for the mental health education of college students and a new way for the construction of a preventive college student mental health education model.

1. Introduction

At present, major institutions are paying increasing attention to the ideological education in order to ensure the psychological health of students. In the process of conducting Civic Education [1, 2], teachers should fully grasp the concept of education, make their own educational tools further improve, make the content of education more diversified, be able to give effective solutions to different mental health problems, ensure the stable and healthy growth of students through Civic Education, so that students can carry out effective logical analysis when facing problems, and put forward the correct solution strategy, for the overall development of the university. This will provide strong support for the overall development of the university. The ideological education is guided by Marxism-Leninism and other ideological theories, focusing on the needs of the contemporary state and society, and guiding students to establish the correct three views. Mental health education in higher education is based on students' individual psychological needs, focusing on their psychological development and personality development to promote good psychological quality. There is an inevitable link between ideological education and mental health education, and it is only through the organic integration of the two that the practical needs of contemporary university students can be addressed. Therefore, combining the two together can, in a broad sense, promote the development of moral education in contemporary colleges and universities, expand the teaching objectives of moral education by improving the way of education development, thus enriching the content contained in moral education in contemporary colleges and universities and improving the effectiveness of the curriculum teaching of moral education in colleges and

universities. In actual life, it realizes the integration between Civic Education and Mental Health Education, improves students' social adaptability, and perfects their personality qualities [2].

The ideological education is responsible for the development of students' inner potential and pays more attention to the cultivation of students' ideology and morality. Mental health education, as an important part of contemporary university curriculum construction, promotes the overall development of students' comprehensive quality, enhances students' psychological tolerance, and improves their psychological quality. Therefore, we can see that mental health education is an important part of ideological and political education, and there is unity in the cultivation objectives between the two. Mental health teachers in colleges and universities can use the ideology education approach to guide students to establish a correct world view and outlook on life and values. They can also introduce psychological health education into the classroom teaching process, so that students have the ability to solve problems on their own and face the pressures of life in a more positive way. The mental health development of university students has gradually begun to mature, and university teachers should combine scientific and systematic ideological education guidance with psychological guidance for students, which will have a profound impact on their daily work and life. At present, there are many undesirable factors and temptations in society that have a negative impact on the psychological health of students, resulting in a higher rate of truancy. Teachers need to keep an eye on students' psychological state, enhance their self-confidence, and encourage them to form a correct and perfect outlook and personality.

At present, most universities have incorporated mental health education into their ideological and political construction education system. They have set up special institutions, offered courses on mental health education, carried out psychological counselling for school students, and established mental health files for students. Most universities conduct psychological tests on students every year, and the tests are mostly conducted in the traditional way; i.e., students are given questionnaires and then the results are collected on basis of which a database is established. A database is capable of providing a simple statistical and overall grasp of the students' psychological problem situation. However, these traditional data analysis methods can only obtain superficial information about psychological data, making it difficult to analyze the data at a deeper level. In addition, the prediction of the future trends based on the available data also becomes hard, i.e., they would not be able to gain essential and scientific knowledge. As a result, the prediction accuracy rate becomes relatively low. Although many data mining tools have emerged which have their own purpose and focus, these mining tools are demanding on the user and not much user friendly; i.e., they require the help of various professionals to achieve the purpose of use.

In this paper, data mining technology is applied to the psychological intervention of college students in Civic and Political Education. The aim is to uncover the useful knowledge veiled under the data of college students' psychological problems through the application of data mining technology, using this valuable knowledge to predict the mental health of college students more accurately, providing a scientific basis for the planning and decision-making of mental health education, making mental health education more targeted and effective, and truly improving the level of mental health education. This will make mental health education more relevant and effective and truly improve the level of mental health education. The following section discusses the data mining and its different techniques including the classification and methods. In third section, the design and implementation of an ideological and political psychological data management system for university students are presented. Finally, the paper is concluded in the fourth section.

2. Data Mining Techniques

This section classifies the systems of data mining with respect to some criteria into database technology, information science, visualization, machine learning, statistics, and many more. Further, the important data mining methods are explained such as decision trees, genetic algorithms, neural networks, rough set, fuzzy set, and statistical analysis. Then the process of data mining is given. Finally, the classification in the mining data is explained in detail.

2.1. Classification of Data Mining Systems. Data mining is the process of extracting from large, incomplete, noisy, fuzzy, random data, information, and knowledge that is implicit in it and not known beforehand but is potentially useful. To put it more bluntly, data mining is the mining of knowledge from data [3]. The raw data can be structured or semi-structured, or heterogeneous and distributed over the network. The discovered knowledge is presented in the form of concepts, rules, laws, patterns, etc. It can be used for process control, query optimization, information management, decision support, and maintenance of own data.

Data mining techniques originate from a number of disciplines [4], all of which have an impact on data mining, as illustrated in Figure 1.

Because data mining is a cross-cutting discipline, data mining gives rise to many different types of data mining systems. A clear classification of data mining systems can provide a scientific basis for the user to select the most appropriate data mining system. Based on different classification criteria, the classification of data mining systems is shown in Table 1.

2.2. Main Methods of Data Mining

2.2.1. Decision Trees. In data mining, decision trees are mainly used for classification [6, 7]. The decision tree model generated using this method looks like an upside-down tree, where the root node at the top level represents a dataset, and each node represents a classification problem. And each branch represents a classification result, and each leaf node at the bottom level represents a category or class distribution. The decision tree represents the classification in a tree-like structure according to

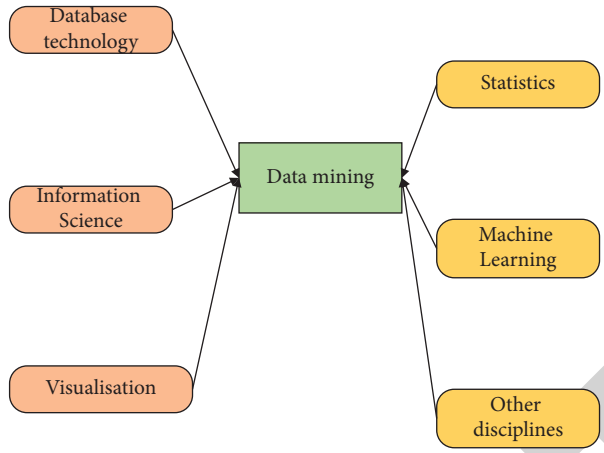

Figure 1: Multiple disciplines influence data mining.

Table 1: Classification of data mining systems [5].

Classification criteria	Category
According to the type of database mined	Relational, transactional, object-relational or data warehouse mining systems, etc.
According to the type of data being processed	Spatial, time series, textual, streaming data, multimedia data mining systems or web mining systems, etc.
Depending on the type of knowledge to be mined	Association rule mining, feature rule mining, classification rule mining, clustering rule mining, etc.
Depending on the type of technology used	Discovery-driven data mining, machine learning data mining, interactive data mining, statistical analysis data mining, etc.
By application area	Data mining for retail, data mining for finance, data mining for telecoms, data mining for internet, etc., data mining, internet data mining, etc.

different characteristics and is used as a basis for generating rules. The main advantages of decision trees are that they are simple to describe, are fast to classify, generate models that are easy to understand and have a high accuracy, and are widely used in various data mining systems. Its main disadvantage is that it is difficult to construct a decision tree based on a combination of variables.

2.2.2. Genetic Algorithms. Genetic algorithms simulate the natural evolutionary process of "survival of the fittest" and are based on the principles of biogenetics [8, 9]. The algorithm is easily parallelized and excels at data clustering. However, it is an algorithm that is not easy to understand, and it is used to solve problems by encoding the problem to be solved first symbolically and discretely. To improve the ease of understanding of the model at a higher level, genetic algorithms are often used in conjunction with neural network algorithms.

2.2.3. Neural Networks. Neural networks are a widely used and very important method in data mining [10]. It is a computational model based on the theory of neurobiology that mimics the working mechanism and structure of neural networks in the human brain. Neural networks exhibit many of the characteristics of the human brain, consist of many interconnected neurons, are capable of performing nonlinear operations and more complex logical operations, and have some of the functions of the human brain. As neural networks are a distributed matrix structure, the neural units are highly parallel and distributed, enabling parallel computation and distributed storage of data, making them highly adaptive, self-organizing, and self-learning.

2.2.4. Statistical Analysis. There are functional relationships between database fields (deterministic relationships that can be expressed in function formulas) and correlation relationships (relevant deterministic relationships that cannot be expressed in function formulas). The analysis of the two relationships can be used by statistical methods, that is, the use of statistical principles of the data warehouse or database information for analysis and processing. The main methods of statistical analysis are shown in Table 2.

2.2.5. Rough Set. Rough set methods can be used for classification, to deal with imprecise, uncertain, inconsistent, and incomplete information, to simplify information as well as to derive knowledge from experience, and as a means of mathematical analysis [12]. Rough sets can also be used for correlation analysis and attribute subset selection. The basic principle of rough sets is based on the idea of equivalence classes, where the elements of an equivalence class are considered indistinguishable. The basic method of rough sets is to discretize the values of the attributes in a relationship using the rough set approximation, classifying each attribute into equivalence.

Table 2: Statistical analysis methods [11].

Method	Function
Common statistics	Sum, mean, maximum, minimum, etc.
Correlation analysis	Correlation coefficients are used to measure the degree of correlation between variables
Analysis of variance	Use the value of a sample statistic to determine the difference between overall parameters
Regression analysis	Expressing the quantitative relationship between variables using linear or nonlinear regression equations
Discriminant analysis	Establishing a discriminant function and specifying the discriminant criteria and then using the discriminant function to assign the object of study to a category
Cluster analysis	Comparing the distances between samples in a sample set and grouping those that are closer together into one category, while those that are further apart cannot be grouped into one category

Based on the equivalence relation of the set, the reduction of the relation is carried out and the minimum decision relation is obtained, thus making it easy to obtain rules. The main advantage of rough sets is that no initial information about the data or additional information is required.

2.2.6. Fuzzy Sets. Fuzzy sets are based on fuzzy set theory for fuzzy evaluation of practical problems, fuzzy cluster analysis, fuzzy pattern recognition, and fuzzy decision-making. In data mining classification, fuzzy set methods enable us to deal with high abstraction levels and provide a means to deal with imprecise measures of data. More importantly, fuzzy sets are able to deal with fuzzy or imprecise facts.

2.3. The Main Processes of Data Mining. Data mining is seen by some as a key step in the knowledge discovery process. The knowledge discovery process is shown in Figure 2. The data warehouse in the figure is the basis for data mining. Because data mining uncovers hidden patterns, it is more commonly equated with knowledge discovery from a pattern processing perspective.

2.4. Classification in Data Mining. Data classification is a very important function of data mining [13]. Data classification has become an important feature of many data mining systems. Classification is the construction of a classification model or classification function (also known as a classifier) based on a given piece of data and the use of this model to classify unknown data records in a database, i.e., for prediction purposes. Data classification can usually be grouped into two steps: building a model and using the model for classification, as shown in Figure 3.

3. Design and Implementation of an Ideological and Political Psychological Data Management System for University Students

The collection and analysis of students' ideological and political psychological assessment data is a basic task necessary for the development of mental health education in colleges and universities, and as the number of students enrolled in colleges and universities increases and the connotation of psychological data analysis increases, more and more psychological data needs to be analyzed and processed in greater depth. This paper adopts a B/S model of psychological data management system for university students based on data mining technology to improve the efficiency of psychological assessment data collection and increase the depth of psychological data analysis. The data mining function of this system can be used to successfully detect the presence or absence of psychological symptoms in students and to achieve the prediction of potential possible psychological symptoms. According to the general steps of data mining, the business process of data mining of university students' ideology and political psychology is designed as shown in Figure 4.

3.1. Data Collection. In order to obtain the required data, 1,700 students in 5 departments, 29 majors, and 42 classes at a university were measured. The students were aged between 17 and 24 years. 1700 self-assessment scales were distributed and 1640 were returned. The collected "symptom self-assessment scales" were used to calculate the scores of each student for each ideological and psychological factor. The data required for the analysis of psychological issues is managed using the database management system SQL Server 2008. The "psychology" database is created in the SQL Server Management Studio of SQL Server 2008 under the graphical interface. Create the "Personal Psychological Problems" and "Personal Profile" tables in the "psychology" database. Table 3 gives the definition of the table structure of the "Personal Psychological Problems" table.

In this paper, 2/3, i.e., 1066 records, were randomly selected from the data set used for the analysis of university students' psychological problems after data preprocessing as the training sample set for decision tree mining, and the other 1/3, i.e., 533 records, were used as the test sample set for decision tree testing. The whole process of constructing a decision tree model of whether students have ideological and political psychological disorders based on the C4.5 algorithm is presented comprehensively below, with the following steps. Equations (1)–(5) were used to calculate the training the information gain rate for each split attribute in the training sample set.

$$\text{Info}(D) = -\sum_{i=1}^{m} p_i \log_2(p_i), \tag{1}$$

where p_i is the probability that any sample in D belongs to C_i and is calculated using $(|C_{i,D}|/|D|)$. In practice, the above equation is simply the number of samples per class as a proportion of the total number of samples utilized. $\text{Info}(D)$

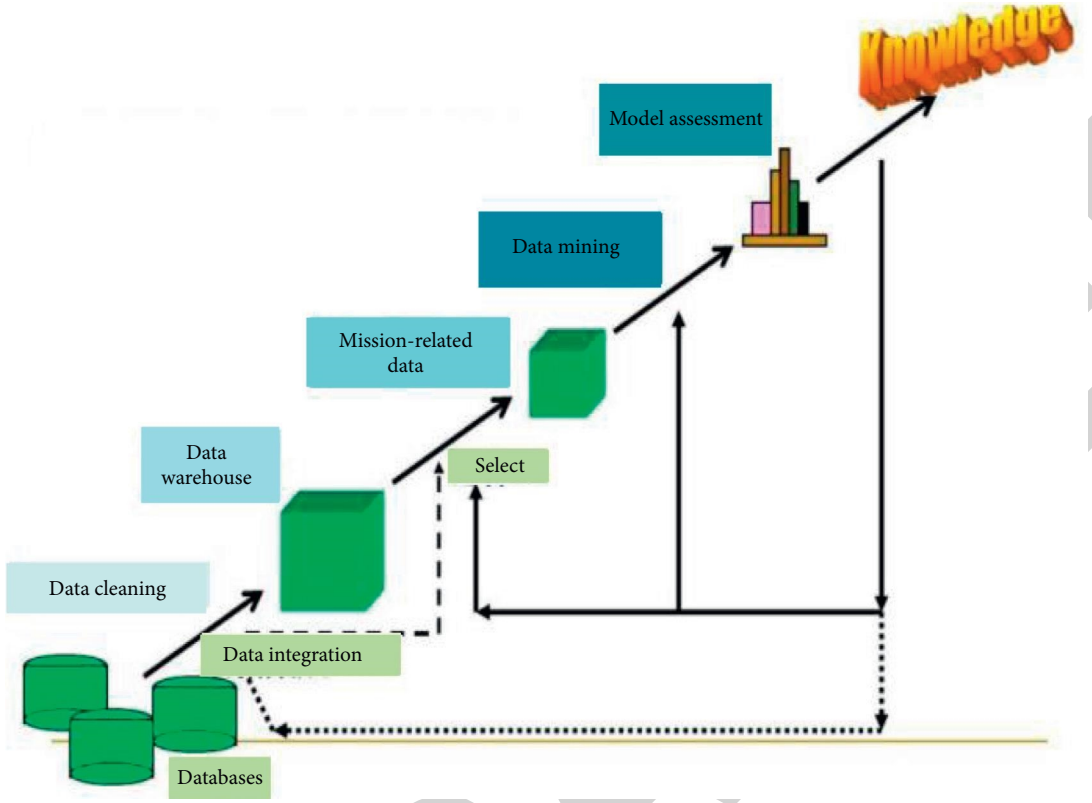

Figure 2: Data mining as a key step in knowledge discovery.

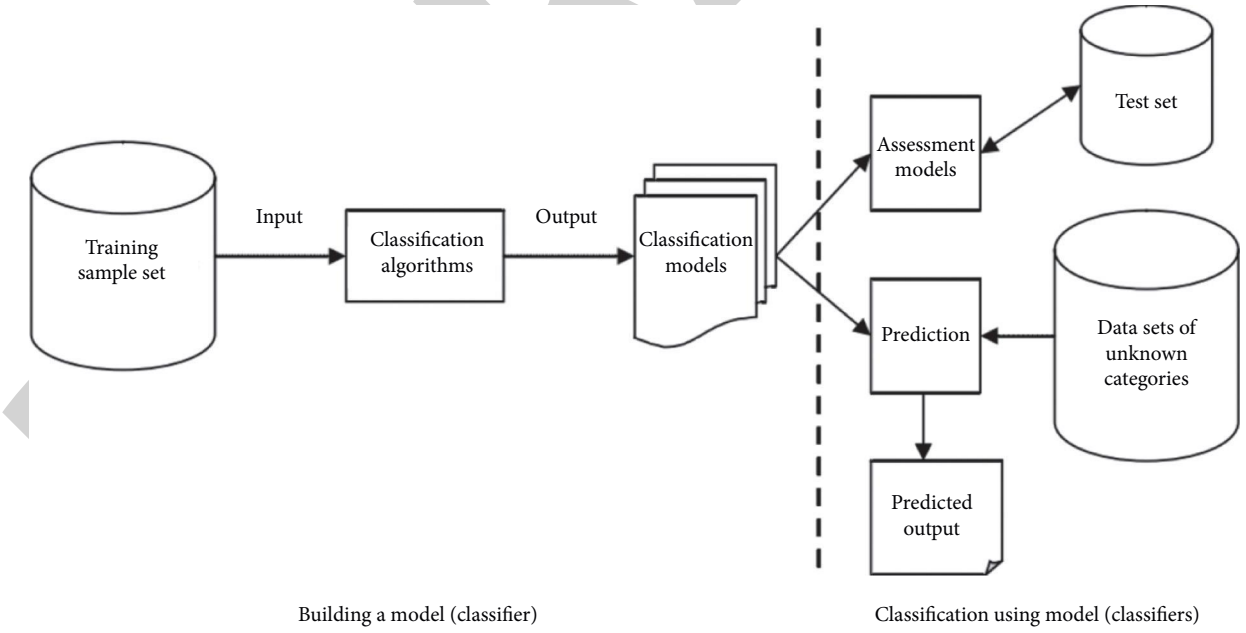

Figure 3: Steps in classification.

is also known as the entropy of D. Entropy is a statistic that measures the degree of disorder in a system.

$$\text{Info}_A(D) = \sum_{j=1}^{v} \frac{D_j}{|D|} \times \text{Info}\left(D_j\right), \tag{2}$$

where $(D_j/|D|)$ is the weight of the subset of values on attribute A that take the value a_j. $\text{Info}_A(D)$ is the desired information needed to classify the samples on D based on the classification by attribute A. This reduction in entropy due to the knowledge of the value of attribute A can be derived from

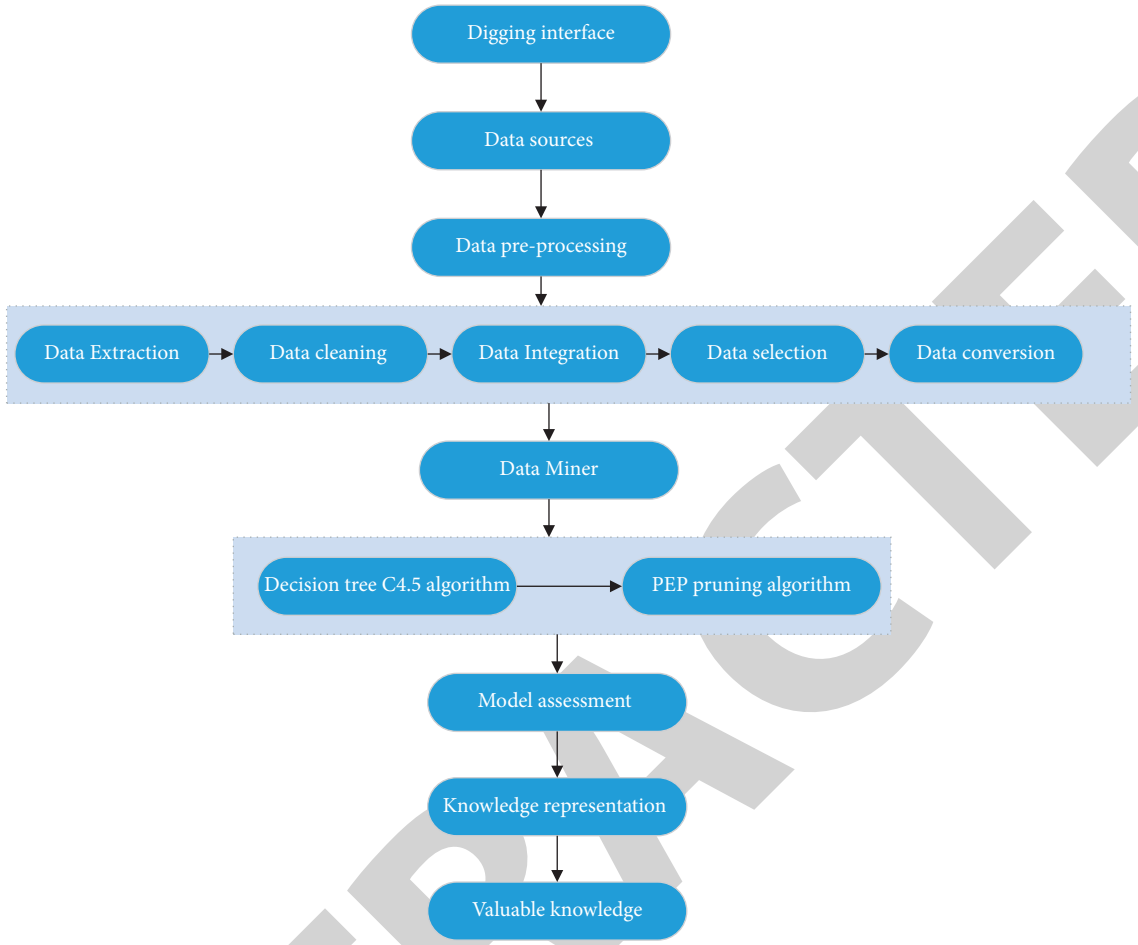

Figure 4: Business process of psychological data mining for university students.

Table 3: Definition of the structure of the "personal psychological problems" table.

Field name	Type	Maximum length	Meaning
XH	C	10	Academic number
Q	N	4	Somatization
QP	N	4	Obsessive compulsive
MG	N	4	Interpersonal sensitivity
YY	N	4	Depression
JL	N	4	Anxiety
DD	N	4	Hostility
KB	N	4	Terror
PZ	N	4	Paranoia
JS	N	4	Psychotic

$$\text{Gain}(A) = \text{Info}(D) - \text{Info}_A(D). \tag{3}$$

Classification actually extracts information from the system to reduce the level of chaos in the system, thus making the system more regular, more orderly, and more organized. The more chaotic the system is, the greater the entropy will be. Clearly, the splitting scheme that results in the greatest reduction in entropy is the optimal splitting scheme. Therefore, the C4.5 algorithm selects the attribute A with the maximum information gain $\text{Gain}(A)$ as the splitting attribute on node N.

$$\text{GainRatio}(A) = \frac{\text{Gain}(A)}{\text{SplitInfo}(A)}. \tag{4}$$

This is the definition of information gain rate. Split information is used in the above equation for the purpose of normalizing the information gain; split information is similar to $\text{Info}(D)$, defined as

$$\text{SplitInfo}_A(D) = -\sum_{j=1}^{v} \frac{|D_j|}{|D|} \times \log 2 \frac{|D_j|}{|D|}. \tag{5}$$

$\text{SplitInfo}_A(D)$ represents the information generated by splitting the training sample set D into v plans corresponding to the v outputs of the attribute A test.

3.2. System Architecture. The system uses the B/S model and the architecture of the system is shown in Figure 5.

According to the analysis and design of the psychological data management system for university students, the student function module and the administrator function module are implemented. When the system is running, the login interface opens first, through which the user enters the account number and password, selects the identity (student or administrator), and after verification, can enter the system. The system login screen is shown in Figure 6.

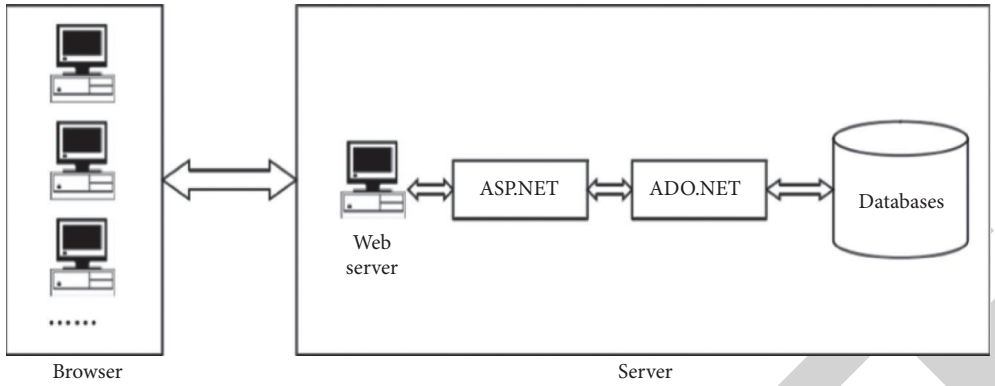

Figure 5: System structure of the ideological and psychological data management system for university students.

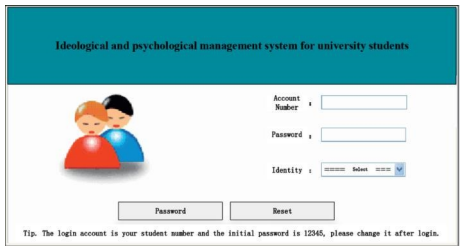

Figure 6: Main system interface.

The process of assessing ideological and psychological interventions for university students using data mining is as follows:

(1) Data preparation: Preprocessing of raw data to provide a data source for the data mining module.

(2) Decision tree generation: The C4.5 algorithm [14] is used to mine the preprocessed data for classification and generate a decision tree model that is pruned using the PEP pruning algorithm.

(3) Generating classification rules: Extracting classification rules from the final decision tree model.

(4) Psychological problem prediction: It predicts which ideological and political psychological symptoms a given student is likely to have by entering the values taken for the attributes of that student.

4. Conclusion

This paper investigated the application of data mining technology in the analysis of the ideological and political psychological problems of college students. The analysis of important techniques of data mining was carried out. Also, a basis was provided for the application of decision tree algorithm for the analysis of political and ideological psychological problems of college students. We applied decision trees for the construction of a classification model for university students' psychological problems. Moreover, a set of B/S structure has been independently developed which is based on data mining, psychological data management system for university students. The paper realized the automation of the collection of basic information and psychological assessment information of college students and increased the depth of data analysis of psychological problems through the application of data mining technology. The application of data mining technology has increased the depth of data analysis of psychological problems.

There are still some limitations in the mining of university students' psychological data. In the actual implementation process, some unexpected problems were encountered, which are not elaborated in detail due to the limited space of this paper. In order for this study to play a greater role in supporting decision-making in mental health education, a great deal of work needs to be done in future research, mainly in the following areas:

(1) When preprocessing the data, missing values in the dataset were simply replaced with a constant, an approach that is too simplistic and could actually try to use more data cleaning strategies.

(2) Since there is no single classification method that is suitable for all classification problems, a comprehensive in-depth study and comparison of various classification methods is a valuable research direction for application.

(3) The focus was the application of classification techniques in data mining, but other techniques of data mining can be tried to analyze the data of university students' psychological problems, such as using the Apriori algorithm of association rules to analyze some intrinsic connection between the data of students' attributes that affect each other. A variety of methods can also be used to analyze the data on students' psychological problems in a comprehensive manner, with a view to providing a more accurate and comprehensive basis for decision-making in mental health education work.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

Acknowledgments

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