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Retraction

Retracted: Teaching Application and Evaluation of Ideological and Political Courses Based on Multisource Data Fusion

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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] J. Zhou, Z. Wei, and J. Shi, "Teaching Application and Evaluation of Ideological and Political Courses Based on Multisource Data Fusion," *Security and Communication Networks*, vol. 2022, Article ID 7048698, 9 pages, 2022.

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Research Article

Teaching Application and Evaluation of Ideological and Political Courses Based on Multisource Data Fusion

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Domestic education and scientific nature of realization automatic evaluation have become issues of concern. The integration of information technology in the teaching field of ideological and political theory courses in colleges and universities (hereinafter referred to as "ideological and political courses") inevitably has an important impact on the teaching of traditional ideological and political courses. ASP.NET is the main interface technology of .NET. .NET is an environment that can provide support for building development and execution in multiple languages, and realizes the functions of language development, code compilation, building configuration, program operation, and object interaction. The system development tool is ASP.NET (Visual Studio 2013), the background database development tool is Microsoft SQL Server 2008, and the system development environment is Windows 7 ×64. The core of the system is multisource data fusion. Firstly, the data are preprocessed to extract useful information data to form data object fusion. Then, convert the code table into a transaction library. In view of the large amount of data to be mined and easily affect mining quality, the improved Apriori-P algorithm based on partitioning in association with rule technology is applied. This algorithm is used to generate frequent itemsets. According to the given minimum confidence, a data fusion rule is generated. Then, the fusion result is generated from the corresponding data report. Before data fusion, system administrators should select data sources from historical databases or existing evaluation databases. When querying rules, different users can log in to the system to query their own data content, students can query the teacher's evaluation results, teachers can query their own evaluation results, and school administrators can view the data fusion results. After evaluating teachers through the campus network, all evaluation data can be integrated and analyzed, and the system automatically generates analysis results corresponding to users. The stability of the teaching evaluation system is better, and the system performance can reach 89% at 5,000 person-hours. The degree of integration between the form of informatization teaching and the teaching content of ideological and political courses, and the information literacy of teachers of ideological and political courses in colleges and universities need to be further improved. This research helps in scientific education. For the problems existing in the current research, starting from the three aspects of teaching concept, teaching mode, and teachers' information literacy, it proposes corresponding effective ways to promote the deep integration of information technology and ideological and political teaching in colleges and universities.

1. Introduction

In recent years, many schools have put forward the educational concept of "developing knowledge and skills simultaneously, cultivating social talents," which requires teachers to have solid professional knowledge and excellent teaching level. At present, the teaching evaluation mechanism of our school still relies on the form of paper questionnaire scoring, the evaluation index has not been updated, and there is a certain subjectivity and one-sidedness. Therefore, the school began to gradually reform the teacher evaluation mechanism and introduced more objective and powerful evaluation measures. In this trend, the school set off a wave of teaching reform.

With the continuous development of multisource data fusion, education informatization has become an irresistible

trend. Multisource data fusion has begun to be applied in various fields of education, providing a convenient and effective teaching aid for better achieving the teaching goals of the subject. Therefore, it is necessary to establish teaching measures, the teaching effect, and the level of teachers with a strict standardized evaluation system. In order to promote teachers' continuous learning, continuously improve teachers' professional knowledge and quality, and improve teachers' teaching effect, so as to promote students' better learning and development, this paper studies the key factors affecting teachers' teaching and the relationship between them. This paper uses a multisource data fusion algorithm to integrate teaching evaluation data, teacher index data, and student evaluation data.

The current research on the integration has not made an in-depth analysis of the ideological and political courses in colleges and universities and has not truly achieved the deep integration of the content of the teaching of ideological and political courses and information technology in colleges and universities. Although Zhu et al. can discover their interrelationships and coupling effects by building large-scale sets, their research lacks data [1]. Figueiredo et al. studied the use of data mining tools with the purpose of examining the chemistry laboratory course on students attributable to laboratory work on learning and their motivation. Response frequency analysis cannot distinguish the interviewee's views based on the types of teaching methods used in the experimental class. On the contrary, the k-means clustering model can conduct a more in-depth analysis of the results. From the students' point of view, this improvement included 3447 Portuguese secondary school students. Although the data mining method was used and the value of k is between 2 and 4, the research is not novel enough [2]. Lu et al. believe that neural networks are not yet considered and their research lacks data [3]. Buczak and Guven believe that focused literature surveys on machine learning (ML) and their research is not logical [4]. From the simple use of information technology as a transmission tool to the integration of information technology and the teaching of ideological and political courses in colleges and universities, in the process of this transformation, we can more clearly understand the practical requirements of ideological and political teaching in colleges and universities, and shortcomings of the teaching mode in the past have been explored, and a more effective teaching method has been explored.

By sorting out the empirical research on the impact of social interaction on online learning engagement, an online learning engagement model is constructed with four dimensions of behavioral, social, emotional, and cognitive engagement, which provides theoretical support for the analysis and evaluation of online learning engagement integrating multisource data. The development tool selection of the system ASP.NET (Visual Studio 2013), the background database development tool is Microsoft SQL Server 2008, and the system development environment is Windows 7 ×64. The core of this system is association rule mining. Firstly, the data is preprocessed to extract useful information data to form mining objects. Then, the code table is transformed into a transaction library. Improved Apriori-P is used to generate frequent itemsets. Given minimum, mining is generated. Then, the mining results are displayed in the form of tables and generated the corresponding data report. Before data mining, the system manager should select the data source from the historical database or the existing evaluation database. When querying rules, different users can log in to the system to query their own data content, students can query the evaluation results of teachers, teachers can query their own evaluation results, and school administrators can view the data mining results. After the evaluation of teachers through the campus network, all the evaluation data can be mined and analyzed, and the system automatically generates the corresponding analysis results with the users.

2. Ideological and Political Teaching

2.1. Multisource Data Fusion. Multisource data fusion refers to a technical method that uses relevant technical means to integrate data to obtain useful data results [5–7]. The principle of data mining is shown in Figure 1. Based on the online learning investment model, the evaluation and analysis results of emotional cognitive investment and the BP neural network based on log data are integrated. In the fusion process, the model data of different evaluation granularities are processed in two dimensions to realize the fusion analysis of different data.

Assuming that [8]

$$Q(c_i) = \frac{n_j}{\text{total}}, \quad j = 1, 2, \ldots m, \tag{1}$$

$$\text{KN} = -\sum_{j=1}^{m} K(c_j)\log_2\left(K(c_j)\right), \tag{2}$$

$$M(S) = \sum_{x=1}^{m} \frac{n_{1x} + n_{2x} + \cdots + n_{mx}}{T}(n_{1x}, n_{2x}, \ldots, n_{mx}). \tag{3}$$

Among them [6, 9],

$$L(n_{1x}, \ldots, n_{mx}) = -\sum_{j=1}^{m} K_{jx}\log_2\left(K_{jx}\right), \tag{4}$$

$$\text{Gain}(Z) = I(n_1, n_2, \ldots, n_m) - E(Z). \tag{5}$$

Databases are extremely susceptible to the intrusion of noisy data and vacant data, which seriously affect the accuracy of data mining. Therefore, before mining, the data must be preprocessed to eliminate the influence of these data [10–12].

$$J_i = 4n\left(\sum_{i=n}^{i-1} C_j + \sum_{i+1}^{i+n} C_j\right), \tag{6}$$

$$M_i = \frac{\left(\sum_{i=n}^{i-1} W_j \times C_j + \sum_{i=n}^{i+n} W_j + C_j\right)}{\left(\sum_{i=n}^{i-1} W_j + \sum_{i=n}^{i+n} W_j\right)}. \tag{7}$$

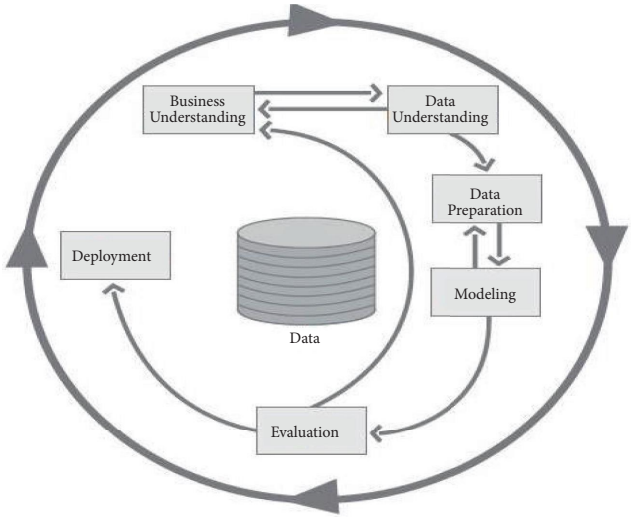

Figure 1: Principles of data mining (http://alturl.com/jhja7).

2.2. Apriori-P Algorithm. The Apriori algorithm has many advantages such as simplicity, easy to understand [13, 14], and is said to be unique. However, the greater the depth of the research, the more and more its own deficiencies will be exposed to people. There are some shortcomings in its application process, which are mainly reflected in frequent scanning of the database and will cause a very large load pressure on the IO. For each k loop performed, each element contained in the temporarily existing Ck needs to be traversed in the database to be able to determine whether it is necessary to increase Lk. If there are 10 sub-items in the frequent itemset, the transaction database must be scanned at least 10 times. Therefore, when faced with massive amounts of data, it will seriously increase the overhead of the system and consume a lot of time. These large number of candidate sets is undoubtedly a big challenge. In today's big data era, the generated frequent itemsets of candidates will be even larger [15, 16].

To find the global frequent itemset, the database is scanned again, and Minisupport is evaluated for each candidate based on the statistical data. Compared with the Apriori algorithm, this method is much simpler, as the Apriori-P algorithm requires only two scans to compare the mined data and it needs to divide the mined data set into blocks before it can be detailed [17]. Therefore, the apriori-P algorithm will greatly improve the convergence speed of the algorithm and improve the computational efficiency. The data mining interface of association rules is shown in Figure 2.

$$M(B_i) = \frac{N_i}{T1}. \tag{8}$$

Expected value QS for data mining [18]:

$$\mathrm{QS} = -\sum_{j=1}^{m} K\left(B_j\right) + \log_2\left(K\left(B_j\right)\right) + \log_2\left(K(A)\right). \tag{9}$$

X by the description attribute F is [19]

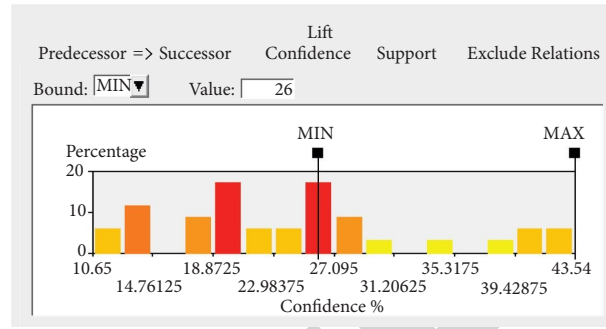

Figure 2: Association rule data mining interface (http://alturl.com/a83kc).

$$E(F) = \sum_{x=1}^{m} \frac{n_{1x} + n_{2x} + \cdots + n_{mx}}{X+1}. \tag{10}$$

Among them [20, 21],

$$E(X+1) = -\sum_{j=1}^{m} p_{jx} \log_2\left(p_{jx}\right). \tag{11}$$

The amount of information when the $E(X+1)$ [22]:

$$\mathrm{Gain}\, X(F) = Z\left(n_1, n_2, \ldots, n_m\right) + Z(G), \tag{12}$$

$$C_i = P\left(\sum_{i=n}^{i-1} A_j + \sum_{i+1}^{i+n} B_j\right) + \sum_{i-1}^{i+n} E_j, \tag{13}$$

$$C_i = \frac{\left(\sum_{i=N}^{i-1} V_j \times C_j + \sum_{i=N}^{i+N} V_j + C_j\right)}{\left(\sum_{i=N}^{i-1} V_j - \sum_{i=N}^{i+N} V_j\right)}. \tag{14}$$

Point that,

$$T = B\left(\frac{\sum_{i=1}^{x} |v_i|}{r} + B\right), \tag{15}$$

$$T_c = T + O\left(\frac{|Cp|}{n} + \frac{\sum_{i=1}^{x} |V_i|}{r}\right). \tag{16}$$

2.3. Ideological and Political Teaching. The existence of systematic thinking education method as a form of concept is an educational concept that objectively reflects the method and its application practice. In the sense of innovation, conceptual thinking often precedes practical application, because the former is the leader of the latter [23, 24]. Only when the conceptual thinking of methods can make continuous innovation and breakthrough with the changes of the times and reality, it can guide the practical application of methods more scientifically, not only practical requirements for innovation of ideological and political education methods but also clearly provide specific ideas and thinking essentially. Once its complex, dynamic, systematic, and holistic way of thinking is embedded in the ideological and political education method and dialectically transformed

and absorbed for the latter, it will optimize the method in the thinking.

The cluster factor C_i of node i

$$C_i = \frac{2e_i}{k_i}(k_i - 1), \tag{17}$$

$$C = \frac{1}{N}\sum_{i=1}^{N} C_i, \tag{18}$$

$$\mathrm{APL} = \frac{1}{N(N-1)}\sum_{i\neq j\in V} D_{ij}, \tag{19}$$

$$r = M^{-1}\sum_i j_i k_i - \left[M^{-1}\sum_i \frac{1}{2}(j_i + k_i)\right]^2. \tag{20}$$

Assuming training, according to the association rule theorem:

$$P(c|X) = \frac{P(X|c)P(c)}{P(X)}. \tag{21}$$

where $P(c|X)$ is the conditional sample attribute X is the category label c, and $P(X|c)$ is category is X. According to the assumption that the attributes are mutually independent, there are

$$P(X|c) = \prod_{i=1}^{k} P(x_i|c), \tag{22}$$

$$h(X) = \arg\max P(c)\prod_{i=1}^{k} P(x_i|c), \tag{23}$$

$$y = \frac{1}{1 - e^{-z}}. \tag{24}$$

Then $z = \omega^T X$, you can get

$$y = \frac{1}{1 - e^{-(\omega^T X)}}. \tag{25}$$

3. Ideological and Political Teaching Evaluation Experiment

3.1. System Development Tools and Operating Environment. For any device and browser, ASP.NET has higher security, stronger upgradeability, updated programming model, and infrastructure.

The development tools and operating environment of this system are as follows.

3.1.1. Hardware Environment. This system needs to process a lot of evaluation data and requires a faster response speed. Therefore, the hardware requirements are CPU 2.2 GHZ or more, memory is more than 4 GB, and hard disk is more than 100 G.

3.1.2. Software Environment. The development software environment of this system is Windows 7 ×64 (win7 ×64 for short). Win7 ×64 is the most popular operating system nowadays. It has the advantages of strong stability, beautiful interface, convenient, and quick use, which is very popular among people.

Environment: Win7 ×64, ASP.NET.

Development language: C#

Development tools: Visual Studio 2013, Framework4.5.1.

Back-end database system: Microsoft SQL Server 2008.

The development tool selection of the system ASP.NET (Visual Studio 2013), the background database development tool is Microsoft SQL Server 2008, and the system development environment is Windows 7 ×64. All the above development tools are produced by Microsoft company, so they have good compatibility, stability, and reliability. The system adopts B/S mode, which is mature.

3.2. System Function Design. The main functions of system requirements are designed as below.

3.2.1. Data Import. Before data mining, the system administrator should select the data source from the historical database or the existing evaluation database.

3.2.2. Association Rule Mining. Core system association rule mining. Firstly, the data is preprocessed from mining objects. Then, the code table is transformed into a transaction library. According to the given improved is used to generate frequent itemsets. Given minimum, mining is generated. Then, the mining result table is generated from the data report.

3.2.3. Rule Query. Different users can log in to the system to query their own data content—students can query the evaluation results of instructors, teachers can query their own evaluation results, and school administrators can view the data mining results.

3.2.4. Online Teaching Evaluation. After the teacher's teaching evaluation is conducted through the campus network, all the teaching evaluation data can be mined and analyzed, and the system automatically generates the analysis result corresponding to the user.

3.3. System Framework Design. The coordination of the functional modules of a system.

(1) User interface layer: the user enters data at the display level, selects the data source, and sets the parameters of the mining. In a series of operations, the administrator can manage the data source of the system and all the user information. Mining results

generated by data mining and the query results of teachers and students are also presented in this layer.

(2) The mining of the middle layer mainly uses the apriori-P algorithm and the mining parameters set by the user to mine the database, and then generates the operation interface layer.

(3) The user provides the operation data to each layer of the system through the interface and also stores the data collected and processed in the database. The overall framework of the system is shown in Figure 3.

3.4. System Sub-Module Design

(1) The user management module adds a system user management module to ensure the security of the system. Students, teachers, supervisors, leaders, and other users were added, different permissions were set, and each type of user enters a different page after logging in to ensure that users will not change data outside of their permissions. Each type of user needs to choose their own identity when logging in, and the password can be modified after logging in.

(2) Data management module design: this is the data control center of the system. Basic functions, including selecting the data source and input and managing basic information such as teachers and students were controlled. Data source management means the administrator can perform operations such as adding and deleting the database of the background system and modifying user information.

(3) Online evaluation module design: after the user passes the identity verification when logging in, the user can realize the online evaluation of the teacher. The online evaluation module mainly completes the functions of student evaluation, online evaluation, colleague mutual evaluation, and expert evaluation.

(4) Data mining module: this is the data mining module. Before data mining, we should first set the minimum support, minimum confidence, select the data source to be mined, and realize data mining. The results of association rule mining will be displayed in the form of a table.

4. Results and Discussion

4.1. Evaluation and Analysis of Ideological and Political Teaching. Set up early warning indicators for work to ensure accurate research and judgment. Teachers need to construct indicators based on their political direction, qualifications, and education effects, and young students should construct equal indicators based on their political attitudes, learning results, and suggestions to ensure that different ideological and political work groups reflect a differentiated focus of research and judgment, and create relevant early warning thresholds. The media frequently used by ideological and political work objects in colleges and universities are shown in Table 1.

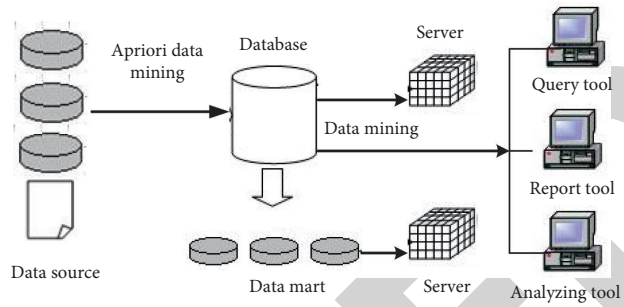

Figure 3: Overall system framework.

Table 1: Media frequently used by ideological and political work in universities.

Options	Subtotal	Proportion (%)
Internet	6480	76.8
Phone	8128	96.33
TV	32 78	38.85
Broadcast	895	10.61
Newspapers and magazines	1442	17.09
Other	925	10.96

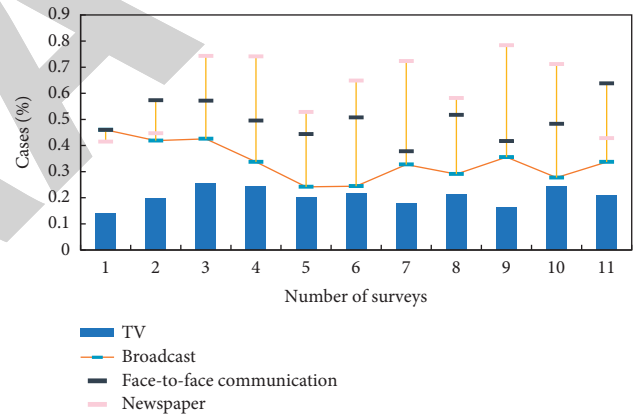

Figure 4: Ways to obtain information.

The information acquisition method is shown in Figure 4. In the survey question, "How do you usually get domestic and foreign news and daily life information," 44.8% of college students chose online forms such as Weibo and WeChat pages, 21.3% chose face-to-face communication, 15.7%, 6.1%, and 3.3% choose traditional media such as television, radio, and newspapers. It can be concluded that although compared with the number of students who do other things through online chat communication or office study, only 17.8% of students are getting domestic and foreign news and social hot events, but most of these people choose the Internet. The platform obtains domestic and foreign news.

Table 2 shows the optimization results of the ideological and political work platform in colleges and universities. By analyzing the length of time students access the Internet and

Table 2: Optimization results from ideological and political work platforms in universities.

Media	Time (h) Internet time per day					Total
	Less than 1 h	1-2 h	3-4 h	More than 5 h	Hardly need	
New media	186	773	2234	2756	16	5965
Traditional media	38	183	355	329	9	914
Uncertain	51	251	548	670	39	1559
Total	275	120 7	31 37	3755	64	8438

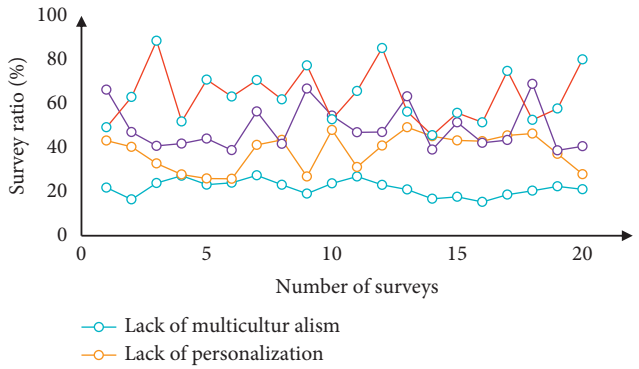

Figure 5: Resource sharing of ideological and political work in colleges and universities.

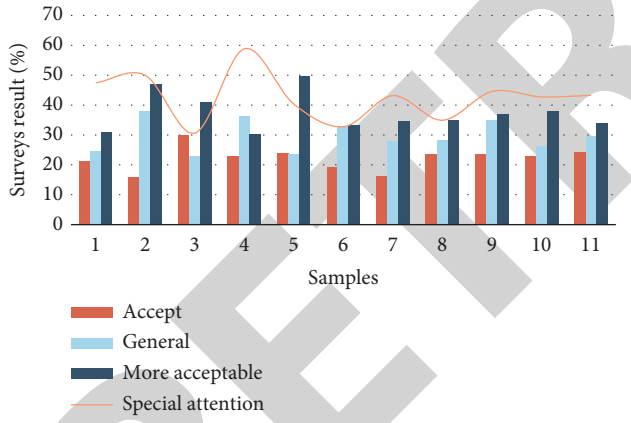

Figure 6: Effective questionnaire analysis results.

the channels to obtain information, it can be seen that only 10.83% use traditional media and 2756 people use new media to obtain information and spend more than 5 hours online every day, even if 159 respondents are unsure in most cases as what kind of media they use to obtain information, but still nearly 43% of students spend more than 5 hours on the Internet every day, and more than 35% of them spend about 3 to 4 hours on the Internet every day. Cross-analysis found that no matter what kind of vast majority of interviewees in the media go online for more than 5 hours a day, followed by 3 to 4 hours, and the proportion of the Internet for less than 1 hour or almost 0 per day is the smallest, so colleges and universities must integrate multiple platforms. In the era of data mining, work and new technologies are fully integrated, but because the Internet platform is not fully

Table 3: Expert evaluation.

Field	Name	Types annotation
PJBH	INT (10)	Evaluation ID
ZJH INT	(10)	Expert number
JSXM VARCHAR	(20)	Teacher's name
KQZB INT	(10)	Preparation before class
JXTD INT	(10)	Teaching attitude
JXNR INT	(10)	Teaching content
JXFF INT	(10)	Teaching method

Table 4: Student evaluation.

Field name	Types	Annotation
PJBH INT	(10)	Evaluation ID
XH INT	(10)	Student ID
JSXQ VARCHAR	(20)	Teacher's name
JXTD INT	(10)	Teaching attitude
JXNR INT	(10)	Teaching content
JXFF INT	(10)	Teaching method
JXSG INT	(10)	Teaching effect

Table 5: Basic data of some teachers.

Serial number	Gender	Age	Education	Job title
1	Male	55	Undergraduate	Associate professor
2	Female	54	Undergraduate	Associate professor
3	Female	47	Master's degree	Associate professor
4	Female	46	Undergraduate	Lecturer
5	Male	47	Undergraduate	Assistant lecturer
6	Female	48	Master's degree	Associate professor
7	Male	50	Master's degree	Lecturer
8	Female	51	Undergraduate	Assistant lecturer
9	Female	53	Master's degree	Lecturer

exploited at present, it is not conducive to improving data mining and analysis capabilities in work.

Figure 5 shows the resource sharing of ideological and political work in colleges and universities. At present, the awareness of data sharing in many colleges and universities is not strong, and the management of resource sharing is hindered. Regarding these challenges faced by colleges and universities, nearly 49.48% of the respondents believed that "information fragmentation and dataization have led to

Table 6: Part of the evaluation data of teachers.

Serial number	Teaching attitude	Teaching content	Teaching effect	Total evaluation score	Evaluation results
1	28	23	15	96	Good
2	9	24	12	77	Excellent
3	25	22	15	87	Good
4	22	23	13	85	Excellent
5	23	23	14	80	Excellent
6	26	26	12	89	Excellent
7	27	24	12	90	Excellent
8	2	23	12	86	Excellent
9	23	22	13	85	Excellent

difficulties in supervision," and 41.23% of the respondents pointed out that "the development of new media is immature and technical problems have increased." Nowadays, the scope, degree, and content are more in-depth, so they rely on data mining to achieve shared understanding, and the strategy needs to be clarified. In addition, data mining techniques are also used to collect, store, and manage data resources at work. However, due to the lack of technical basis for association and sharing, it is impossible to classify and integrate data resources, and the compatibility and collaboration of resources between different departments are poor, and mutual enjoyment is hindered.

The results of the effective questionnaire analysis are shown in Figure 6. In the teacher survey questionnaire, the survey on "whether you pay attention to students' browsing on the school's propaganda network platform" found that 42.29% of teachers expressed occasional concern and 36% of teachers expressed great concern. At the same time, among the teachers who participated in the survey, 49.71% of the teachers believed that the students' acceptance of online ideological and political education was good, but there was still room for development; 28% of teachers believe that the effect is general and not obvious, and new breakthroughs are needed; 20% of teachers believe that online has advantages, student acceptance is very good; only 2.29% of teachers believe that students' acceptance of online good, and there is still room for development.

4.2. Teaching Data Mining and Analysis. Expert evaluation is shown in Table 3. The table includes fields such as evaluation number, expert number, teacher's name, pre-class preparation, teaching attitude, teaching content, teaching method, teaching organization, teaching effect, and total evaluation score.

Student evaluation is shown in Table 4. The fields included are evaluation number, student number, teacher name, teaching attitude, teaching content, and total evaluation score.

First, collect public data such as classes, students, and courses, and synchronize the corresponding data in the system. Then import the basic information of 112 teachers at the school into the system and import the teaching evaluation data of 2186 students in the first semester of 2019. The system uses the Apriori-P algorithm. The basic situation data of some teachers is shown in Table 5.

Part of the evaluation data for teachers is shown in Table 6.

Table 7: Some results of mining teaching evaluation data.

Rule	Age	Job title	Support (%)	Confidence (%)
1	A1	J3	31	16
2	A2	J2	32	43
3	A3	J1	12	37.5
4	A4	—	16	14.3
5	—	—	61	80
6	—	—	13	32
7	—	—	16	12.1
8	—	—	36	76.2
9	—	—	55	24.2

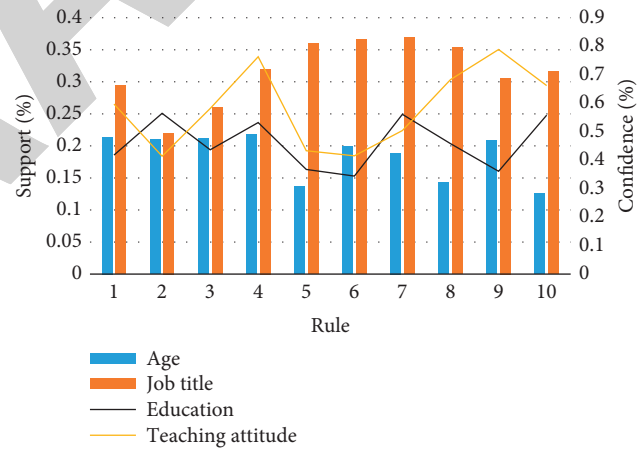

Figure 7: Teaching data evaluation.

The results of mining teaching evaluation data are shown in Table 7.

The evaluation of teaching data is shown in Figure 7. Rule 1 is explained as the teaching evaluation data, teachers aged between 22 and 30 who have an evaluation result of "excellent" account for 31% of the total number of records, and the teaching quality evaluation result of teachers in this age group is "excellent" accounted for 16%. Rule 2 is explained as the teaching evaluation data, teachers aged between 31 and 35 and the evaluation result is "excellent" account for 32% of records, and the teaching quality evaluation result of teachers in this age group is "excellent" accounted for 43%. Rule 3 is explained as the teaching evaluation data, teachers aged between 36 and 49 and the evaluation result is "excellent" account for 12% of the total number of records, and the teaching quality evaluation result

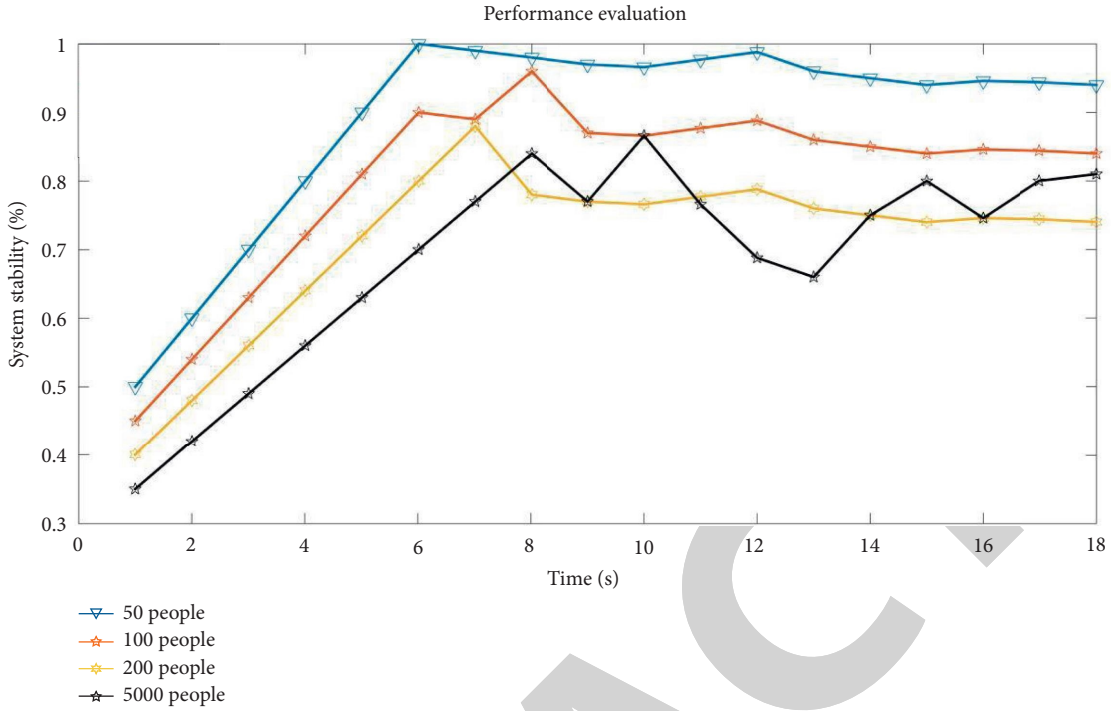

Figure 8: System performance test.

of teachers in this age group is "excellent" accounted for 37.5%. Rule 4 is explained as the teaching evaluation data, teachers aged between 50 and 60 who have an evaluation result of "excellent" account for 16% of the total number of records, and the teaching quality evaluation result of teachers in this age group is "excellent" accounted for 14.3%. Rule 5 is explained as the teaching evaluation data, 61% of the total records are professor and the evaluation result is "excellent" and 80% of the professor have the teaching quality evaluation result as "excellent."

The system performance test is shown in Figure 8. Because this system is a web-based application software, it must face online visitors, so it needs to carry out stress testing to test the stability of the system when the number of visits is large. Arrange 50, 100, 200, and 5000 people to log in to the system to participate in the teaching quality scoring page, test, and analyze the stability of the system performance, verify the data concurrent processing and information service pressure, whether the performance and function system meet user's requirements in the case of a busy network. The teaching evaluation system has better system stability over time, and the system performance can reach up to 89% when the number of people is 5000.

5. Conclusion

This article first conducts a comprehensive analysis of data fusion technology and uses data association rule algorithms to fuse historical and existing teaching evaluation data, to find out whether the key factors affecting teaching quality is reasonable, scientific, and objective. A teaching quality evaluation system based on multisource data fusion is realized, which provides convenience for school information management. This paper also summarizes the research and current situation of data mining fusion technology at home and abroad, and its application in education informatization, and deeply analyzes the meaning and value of education fusion, the data sources of education data fusion, and the main methods and applications of education data fusion. This article discusses the association rule technology in detail, introduces the classic algorithm Apriori algorithm and several improved algorithms of association rules, as well as the analysis and research of the Apriori algorithm and its partition-based Apriori algorithm. The advantages of the partition-based Apriori algorithm are analyzed. According to the characteristics of actual teaching, to find out the key factors of teachers, complete the collection of historical and existing teaching evaluation data, establish a database suitable for fusion, preprocess the data, establish a fusion model, and use a partition-based algorithm integrated Apriori finds useful association rules to school administrators. It can better adapt to the differences of students, and the evaluation results obtained are more objective and accurate than the general method. However, due to the small amount of student learning data collected in this study, it can only be used to construct a general assessment method. Therefore, in the next step of research work, we can consider collecting enough student learning data to conduct a personalized assessment of learning engagement.

Data Availability

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

Conflicts of Interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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