

Retraction

Retracted: Computer Simulation of Ideological and Political Teaching under Big Data of Complexity

Complexity

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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] G. Zhu, G. Zhu, and J. Zhang, "Computer Simulation of Ideological and Political Teaching under Big Data of Complexity," *Complexity*, vol. 2021, Article ID 9941592, 13 pages, 2021.

Research Article

Computer Simulation of Ideological and Political Teaching under Big Data of Complexity

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This study is to discuss the application of computer simulation technology (CST) in ideological and political teaching (I&P teaching) and promote the reform of ideological and political teaching in the era of big data. In this study, a set of computer simulation system for I&P teaching is constructed, and targeted research is launched from this. The main research results are as follows: Firstly, a computer simulation system for ideological and political teaching is designed based on the Apriori algorithm and other theoretical foundations. The system includes a user layer, a business layer, and a data layer. The main modules of the system include the website (WEB) server, Mail server, and user terminal. Secondly, the system is tested accordingly. The performance test and function test results reveal that when the maximum number of concurrent users is 500, the system can run normally with the maximum response time of 6.6 s and the good condition of various functions, so it can meet the actual needs of universities. Finally, in comparison with the conventional I&P courses, the proposed system can effectively improve the attitudes towards I&P courses of students, increase their satisfaction and acceptance of I&P teaching, and contribute to the mastery of knowledge. Therefore, the designed system can realize a good actual teaching effect and show reliable application value. In addition, the results of this study can provide scientific and effective reference materials for subsequent research on I&P teaching.

1. Introduction

I&P courses are very important in the study and life of contemporary college students, which can help contemporary college students to shape their own spiritual character and establish a correct worldview [1]. Relevant research shows that ideological and political education activities generally exist in the historical process of the development of class society, and it develops along with the evolution of class society [2, 3]. The current stage is an era of intelligent big data. In the teaching practice of I&P courses, it should pay more attention to the current background and promote the development of disciplines [4]. Therefore, researchers should adopt a variety of methods to enrich the teaching mode of I&P courses, improve the enthusiasm for learning I&P courses of the college students, and promote the intelligent and enriched development of I&P teaching practice.

The rapid development of computer and Internet technology is also an important tool for the educational reform of I&P courses [5]. Among them, CST has achieved good application effects in the teaching practice summary [6]. A large number of studies have shown that CST can be used in the teaching of biology, physics, and chemistry experiment courses. In the era of information explosion and big data, CST has played an important role [7]. The advantages of CST are mainly as follows: using CST can simulate the process of experiments and cultivate the imagination of students; CST can mobilize the classroom atmosphere and cultivate the learning enthusiasm of students; and using CST can also break the limitations of time and space, present teaching content vividly and concretely, deepen the understanding and mastery of knowledge by students, improve the teaching quality, and achieve teaching optimization [8, 9].

Based on relevant knowledge of Internet application algorithms, a computer simulation system for I&P teaching is established for the practical application of I&P teaching for college students. The performances and functions of the system are tested to judge the basic situation of the system. In addition, the system is applied to the actual practice of I&P teaching. The differences between using this teaching system and the traditional teaching mode are compared and analyzed based on the questionnaire survey, so as to explore the actual application of the system. The objective of this research is to propose possible ideas for the reform of ideological and political education in universities and to expand the application scope of advanced CST in dealing with complex problems.

2. Teaching System and Experimental Methods

2.1. The I&P Courses in Universities. At this stage, the overall environment for ideological and political education and the mainstream development thinking of college students are good, but there are still some issues worthy of our focus [10]. First of all, traditional teaching methods are still used in part of I&P teaching, lacking of attention to the inner needs of students, so that actual needs of students are often not met [11]. Secondly, there is a sense of distance between teachers and students in teaching, causing students to resent education [12]. In the final analysis, some I&P courses suffer from a theoretical empty talk, which causes their lack of sense of spiritual gain, and students cannot empathize with what they have learned. In this context, if the I&P courses cannot be combined with the actual thinking of college students and the teaching methods cannot keep up with the times, then the joint force of ideological and political education cannot be formed. In this case, the teaching of I&P courses will be weak in pertinence and effectiveness, and the teaching is only formal and superficial, which greatly weakens the teaching effect of I&P courses [13].

In the related research of ideological and political classroom teaching, it has become a consensus to carry out intelligent curriculum education with college students as the main body. For the current ideological and political classroom teaching practice, the reform of I&P teaching has become a key issue that researchers need to pay attention to due to the transformation of teaching concepts [14]. When the educational reform is performed on the I&P courses, it is necessary to take the learner as the center and let the learners actively participate in the construction of knowledge meaning and the understanding and perception of teaching content. In addition to that, it has to give full play to the initiative of learners in the learning process, so that learners have multiple opportunities to apply the knowledge they have learned in different situations and form an understanding of objective things and solutions to practical problems based on the feedback information of their own actions, realizing self-feedback of students themselves [15]. In addition, it is necessary to pay attention to the development of nonintellectual factors of students, stimulate their interests in ideological and political learning, and promote the development of their creativity, thinking ability,

competitiveness, and antifrustration ability. What is more, it has to enrich the contents and interest of the ideological and political classroom. A complete and smooth classroom environment and order had to be paid attention to in ideological and political classrooms. If the natural and smooth teaching links cannot be guaranteed, students will have a sense of abruptness in ideological and political education [16]. Based on the actual situation of I&P teaching at this stage, an intelligent I&P teaching model is established based on students as the main body in this study, as shown in Figure 1:

As illustrated in Figure 1, CST always runs through the various processes of I&P teaching in this system, which is a key part of realizing intelligent I&P teaching and is also the key technology explored in this study.

2.2. Teaching with CST. In practice, it is necessary to analyze the specific functions of CST and to develop a series of teaching strategy designs for the basic problems of existing I&P teaching [17]. In this study, CST is mainly adopted to create teaching situation strategies and realize knowledge visualization strategies and intelligent management and classroom questioning strategies, so as to stimulate the interest of students in learning and enhance learning effects. In the strategy of creating a teaching situation, the CST is applied to create a teaching situation, analyze the existing teaching content, and visualize the teaching content through multimedia courses to enhance students' understanding of the teaching content. Bringing the emotions and thoughts of students into the study is conducive for obtaining the development of thinking and the promotion of emotions. Knowledge visualization is taught through concept maps, mind maps, flowcharts, or animations. In I&P teaching based on CST, the tacit knowledge such as cognition, emotion, belief, experience, and skills are presented through text, image, video, and sound, making it easier for students to learn, improving the teaching effect. In the classroom questioning session, the open questions are set to encourage students to discuss freely and answer independently, realizing full respect on differences of individual students and promoting the thinking development of students.

2.3. Apriori Algorithm Based on the Association Rules. The association rules-based Apriori algorithm is an important part to design the computer simulation system for I&P teaching [18, 19]. The association rules are mainly to assist in finding the interrelationship among the data in the database. The association rules are mainly defined as follows.

Equations (1)–(3) are supposed as follows:

$$I = i_1, i_2, \dots, i_n, \quad (1)$$

$$T_i = \{I_{i1}, I_{i2}, \dots, I_{ik}\}, \quad (2)$$

$$I_{ij} (j \in [1, k]) \subseteq I. \quad (3)$$

In the above equation, I refers to a collection of a group of projects. D is a collection of all transaction records T , T is

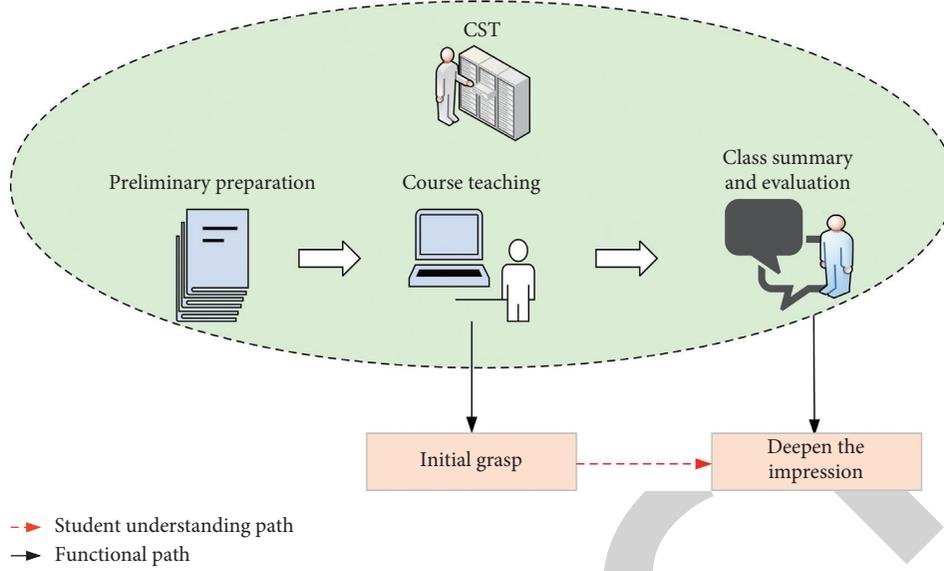


FIGURE 1: The intelligent I&P teaching mode system.

a subcollection of any item in I , and each transaction I is a nonempty subcollection and has a corresponding unique ID. The set of all items is called the item set. The number of items contained in this item set is the length of the item set. If the length is k , then this item set is called a k -item set.

In this study, $A \rightarrow B$ is set as an association rule, where A and B have the following conditions:

$$\{A, B | A \subset I, B \subset I\}. \quad (4)$$

In the association rules, support, confidence, and lift are the three most important parameters [20]. Support mainly refers to the number of transactions that comply with the rules. It not only can judge the validity of the rules but also can greatly reduce the number of rules. The specific expression is as follows:

$$\text{Support}(A \rightarrow B) = P(A \cap B). \quad (5)$$

Confidence refers to the accuracy of the rules, and it can be considered as the possibility of occurrence of B under the condition of A . Its equation is shown as follows:

$$\text{confidence}(A \rightarrow B) = P(B|A) = \frac{P(A \cap B)}{P(A)}. \quad (6)$$

Specifically, if there are association rules between different transactions A and B , the following three conditions need to be met:

$$A \in I, B \in I, \quad A \cap B = \emptyset, \quad (7)$$

$$\text{sup}(A \rightarrow B) \geq \text{min sup}, \quad (8)$$

$$\text{conf}(A \rightarrow B) \geq \text{min conf}. \quad (9)$$

Lift mainly refers to the ratio of the possibility of containing both B and A and the possibility of the occurrence of the set B under unrestricted conditions. It is basically the

same as the function of confidence. It can measure the reliability of the rules and can be regarded as a supplementary explanation of the confidence degree. Its basic equation is given as follows:

$$\text{Lift}(A \rightarrow B) = \frac{P(A \rightarrow B)}{P(A) * P(B)}. \quad (10)$$

There are several conditions for equation (10) as follows:

$$\text{Lift}(A \rightarrow B) = 1, \quad (11)$$

$$\text{Lift}(A \rightarrow B) > 1, \quad (12)$$

$$\text{Lift}(A \rightarrow B) < 1. \quad (13)$$

When equation (11) is true, set A and set B are independent of each other and have no correlation with each other. When equation (12) is true, the occurrence of set A and set B is positively correlated; that is, the emergence of each set A implies the emergence of another set YB , showing a strong association rule between the two. When equation (13) is true, the occurrence of set A and set B is negatively correlated; that is, the appearance of a set A may lead to the nonappearance of another set B , showing an invalid strong association rule between the two.

The Apriori algorithm is a relatively mature correlation algorithm, and it is also a typical bottom-up algorithm. It starts from the shorter item set, gradually analyzes the longer item set, and then finds the association rules [21]. The structural framework of the Apriori algorithm is shown in Figure 2.

The overall idea of the Apriori algorithm is also based on the idea of frequent item sets. If a specific item set is a frequent item set, then all its nonempty subsets are also frequent item sets. The database is read according to the set of candidate items, the support value is calculated, and a large set of items of the same length is generated. After the

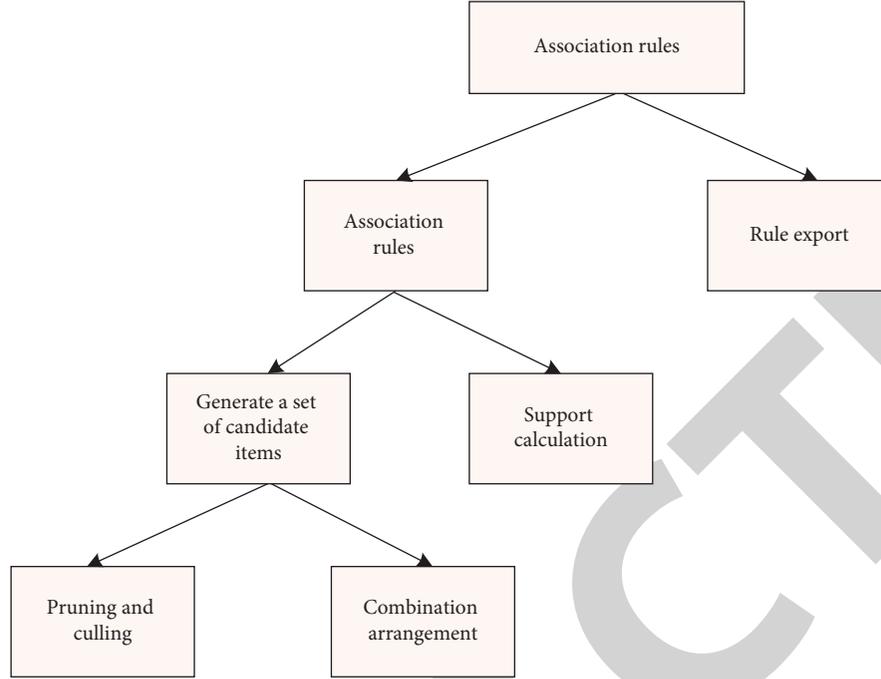


FIGURE 2: The structural framework of the Apriori algorithm.

generation is completed, the candidate item set of the next length is calculated, and then the database is read. The cycle continues until there is no big item set [22, 23].

The Apriori algorithm can be divided into two steps, namely, connection and deletion. The specific implementation process is as follows:

Firstly, item sets L_{k-1} and L_k are set, where L_{k-1} can be expressed as the following equation:

$$L_{k-1} = \{l_i, l_j\}. \quad (14)$$

In the item set l_i , the j^{th} item and the penultimate item can be expressed as follows:

$$l_i[j], l_j[k-2]. \quad (15)$$

The connection of L_{k-1} can be expressed as follows:

$$L_{k-1} \oplus L_{k-1}. \quad (16)$$

Equation (15) indicates that if l_1 and l_2 have the same $(k-2)$, then l_1 and l_2 in L_{k-1} can be connected. In order to ensure the uniqueness of the item set, the corresponding constraint conditions have to be met. The specific expression of the constraint conditions is given as follows:

$$l_1[k-1] < l_2[k-1]. \quad (17)$$

In L_k , some nonfrequent item sets are also included, namely,

$$L_k \subseteq C_k. \quad (18)$$

In the equation above, C_k is a superset of L_k . The support frequency of each candidate set in C_k can be obtained by scanning the database once and finding frequent k -item sets. However, this operation often consumes a lot of space and

time resources, resulting in implementation efficiency being low. Therefore, the size of C_k has to be reduced, that is, if any subset of the candidate k -item set does not belong to L_{k-1} , this candidate k -item set should be deleted from C_k .

In the Apriori algorithm, the interesting measurement (IM) factor is also one of the factors that need to be considered. IM can be used to calculate the degree of correlation among the item sets to predict the benefits of using the rules. It can be defined as follows:

$$\text{I.M.} = \frac{P(A \cap B)}{P(A)} = P(B) > d. \quad (19)$$

There are three conditions for IM, as given in the following equations:

$$-1 \leq \text{I.M.} < 0, \quad (20)$$

$$0 < \text{I.M.} \leq 1, \quad (21)$$

$$\text{I.M.} = 0. \quad (22)$$

When equation (20) is established, A and B are negatively correlated, which means that the appearance of A will reduce the probability of B appearing; when equation (21) is established, A and B are positively correlated, which means that the appearance of A will increase the probability of occurrence of B ; and when equation (22) is established, A and B are not related [24].

2.4. The Computer Simulation System for I&P Teaching

2.4.1. Overall Framework. The designed computer simulation system for I&P teaching adopts the .NET system construction method, so users can access and query each

page according to their actual needs without affecting other pages [25]. The teaching system as a whole can be divided into three levels: the user layer, the business layer, and the data layer. The specific framework of the I&P teaching system is shown in Figure 3.

As illustrated in Figure 3, the entire system includes the WEB server, Mail server, directory server, student terminal, and database server. Among them, the database server is the core of the innovation project management system, which can collect the data of each innovation project and exchange it with the remote server through Transmission Control Protocol/Internet Protocol (TCP/IP) to realize the upload of innovation project data and the download of commands [26]. The WEB server is the software logic of the installation system, which can realize the execution of software functions. The WEB server is connected to the system through the network. The student can log in to the system through the network and enter the request to the WEB server, and then the WEB server can perform specific business execution and return the results. The main function of the student terminal is to operate the terminal locally, communicate with the server, and send it to the background processing center through the network. The student terminal can also accept the return information sent remotely, convert it to the local format, and then send it to the server.

The software layer architecture diagram of the I&P teaching system is shown in Figure 4.

As can be seen from Figure 4, the software layer of the computer simulation system for ideological and political teaching can mainly be divided into the presentation layer, the logic layer, and the data layer. The data layer mainly includes course video data, course PowerPoints (PPTs), and data. In the logic layer, it can realize video management, PPT management, and online discussion. The presentation layer is the user interface, where system users can implement various basic operations.

2.4.2. Main Functions. Based on the actual situation of I&P teaching courses in universities, the designed computer simulation system for I&P teaching mainly includes three main functions: I&P courses courseware management, classroom feedback management, and classroom online discussion. The main module is based on the curriculum strategy of CST teaching as the guiding ideology; fully considers the possible problems in the three different stages of the ideological and political classroom before class, during class, and after class; and performs the targeted analysis.

The I&P courses courseware management module can realize the management of PPTs, videos, and other courseware needed in class. It can be classified into teacher users and student users. Teachers can complete the uploading, temporarily storing, modifying, maintaining, viewing, and deleting the course PPTs and videos, while students cannot complete the modification and deletion of the course PPTs and videos. The schematic diagram of the I&P courses courseware management module is shown in Figure 5.

The online discussion function can realize the discussion while the teaching is in progress. The teacher opens the

discussion area in the classroom, and all students can receive this information and directly remember to interact. After the discussion, the teacher closes the online discussion function. Moreover, the interaction between students and teachers can also be realized in this functional area. Students can ask questions to teachers in this area, and teachers can answer them. The schematic diagram of this functional module is shown in Figure 6.

The classroom feedback management module can realize interactive communication between students and teachers in the teaching process of I&P courses. Students can send questions to the teacher after class, and the teacher will reply as long the question is found. Using this module can effectively increase the frequency of communication between teachers and students and help improve the teaching level. In addition, the system also has an automatic question-and-answer function. Simple questions of students can be answered automatically, which reduces the work pressure of teachers and improves the motivation for learning of students.

The intelligent teaching assistant module is a special function module in this system, which can mainly provide intelligent answers to simple questions raised by students. For unstructured and complex questions, it will be answered after being processed by the information analysis mechanism. The main function of this module is shown in Figure 7.

As shown in Figure 7, the intelligent teaching assistant module is mainly developed for student users, where student users can get answers to corresponding ideological and political questions. The intelligent teaching assistant function can also effectively reduce the academic pressure of teachers and improve the learning enthusiasm of students.

The main function is realized based on the Apriori association law, and its main realization process is shown in Figure 8.

Figure 8 suggests that the questions raised by the students firstly enter the word segmentation module for processing to filter the repeated words and sentences. Then, the weights are calculated and the association is analyzed to get the corresponding classification results. The system will answer intelligently based on the results obtained.

2.4.3. Database Design. Due to the large number of students involved in actual classroom teaching, the platform taking structured query language (SQL) server as the database is selected as the system database of the I&P teaching system to meet the actual needs [27, 28]. At the same time, the attributes satisfying all entity objects and objects in the computer simulation system for I&P teaching are designed in accordance with the actual functions and requirements of the system, and the connections among different entities are analyzed. The main tables involved in this study include the student table, teacher table, PPT table, course video table, discussion record table, and feedback record table. Student attribute and teacher attribute include the name, password, email address, and nickname of the student or teacher. PPT attribute and course video attribute include the title, content, submitter, submission time, course chapters, and other

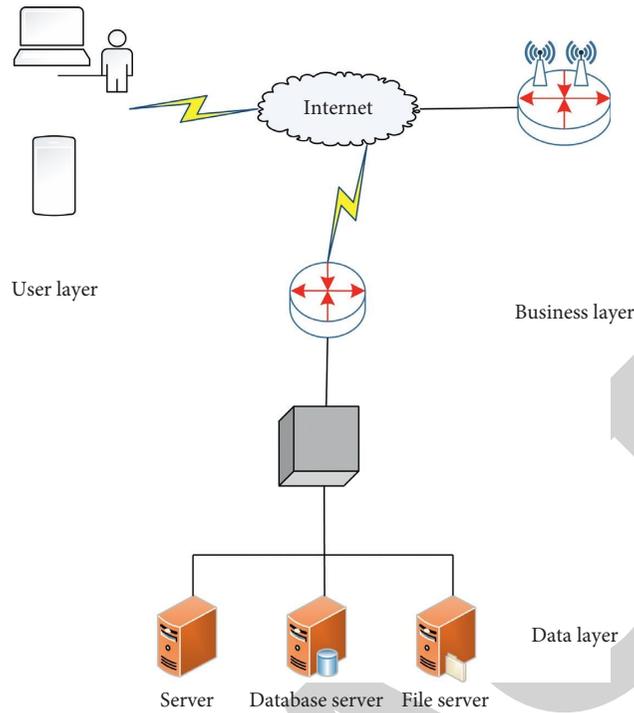


FIGURE 3: Framework of computer simulation system for I&P teaching.

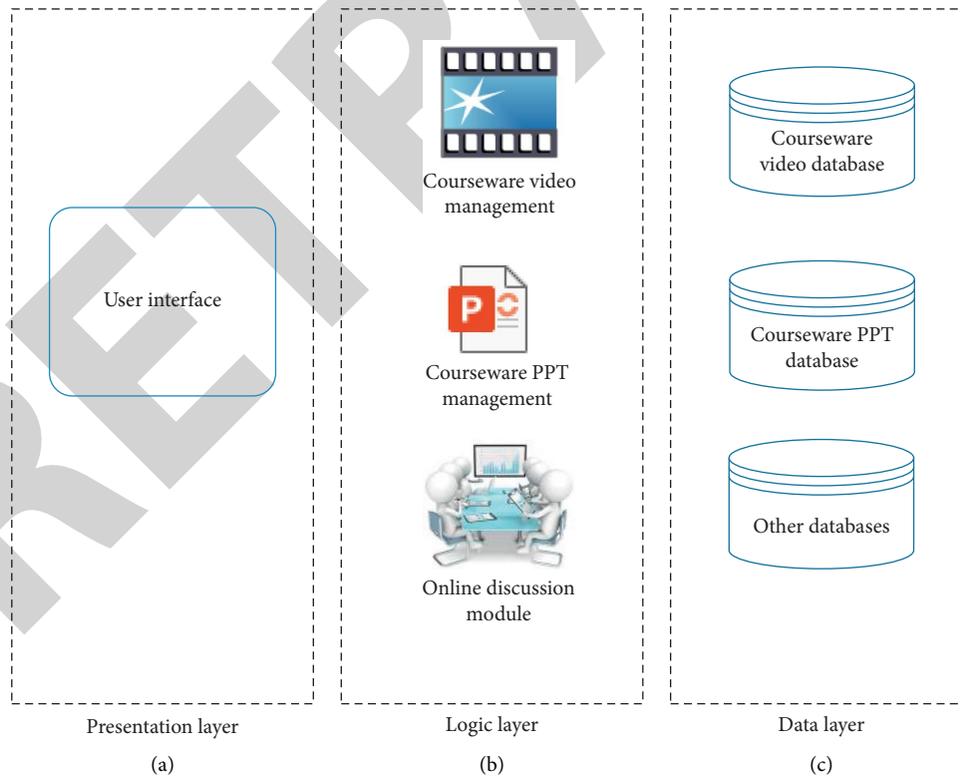


FIGURE 4: The software layer architecture diagram of the I&P teaching system.

information of the PPTs or videos. Discussion record attribute includes the discussion time, discussion content, discussion courses, discussion areas, and publishers. The

feedback record attribute included the feedback time, feedback content, feedback question, question answer, feedback person, and answer person.

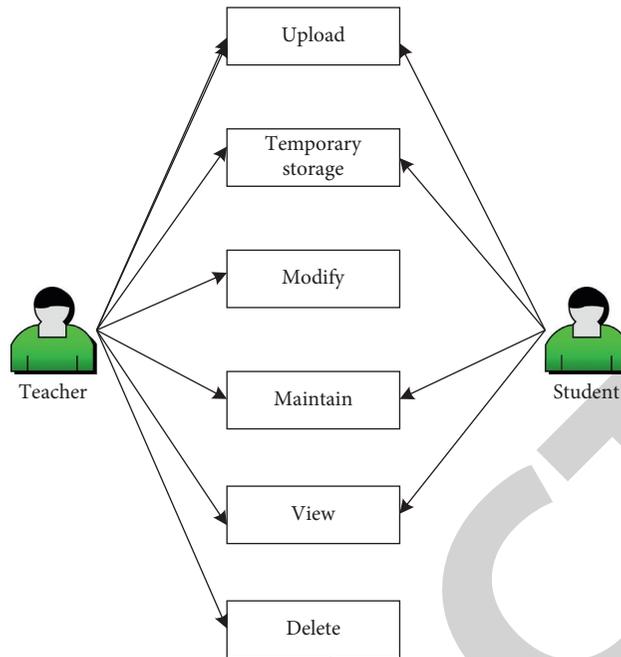


FIGURE 5: The I&P courses courseware management module.

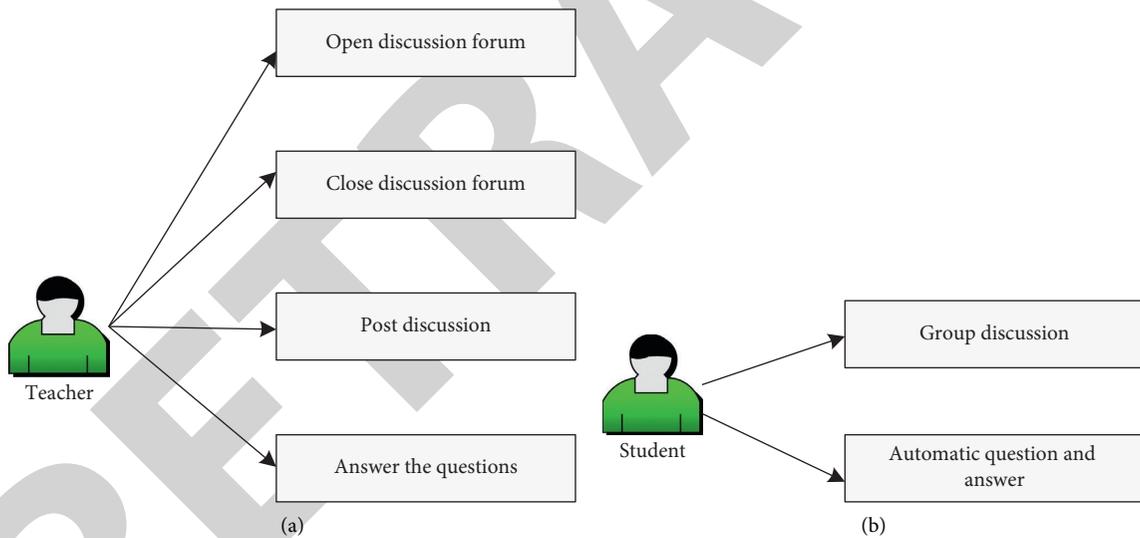


FIGURE 6: The schematic diagram of the online discussion function for the I&P teaching system.

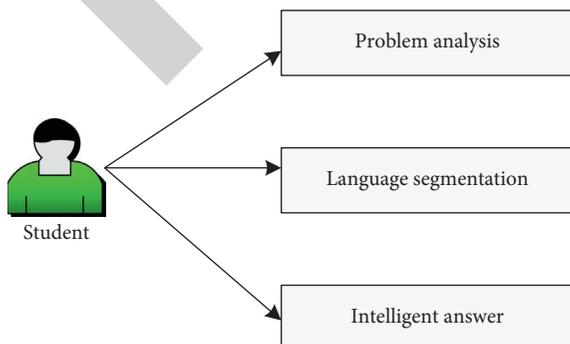


FIGURE 7: The main function of the intelligent teaching assistant module.

2.5. *Experimental Methods and Environment.* The performances and functions of the system are tested on a computer simulation system for I&P teaching. The main test environment is shown in Table 1.

The system is applied to the teaching of I&P courses in a freshman class at universities, to further clarify its application effect. There are 53 students in this class, and the ideological and political course conducted is *Ideological and Moral Foundation and Legal Cultivation*. In the teaching of this course in this class, the traditional teaching methods and the one using computer simulation system for ideological and political teaching are adopted in this study. Then, a questionnaire survey is used to count the attitudes towards

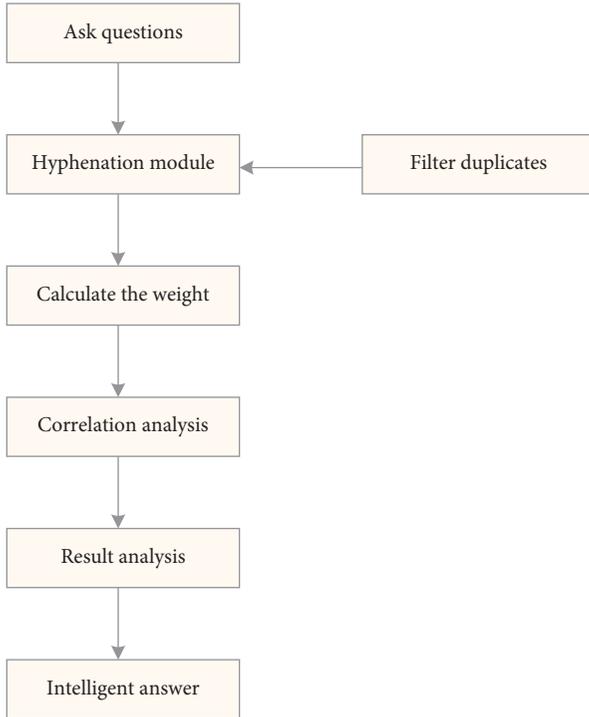


FIGURE 8: The process of the intelligent teaching assistant function.

TABLE 1: The main test environment of the system.

Category	Parameter
Central processing unit (CPU)	Intel core i5-10600KF Intel core i7-10700
Random-access memory (RAM)	16G 8G
Operating system	Windows 10
Hard disk	320G

I&P courses of students and their mastery of ideological and political knowledge [29]. The questionnaires used in this study are analyzed from the students' attitudes towards I&P courses, the degree of satisfaction with classroom teaching, the acceptance of I&P courses, and their own learning situation. There are 4 question options for each part, and Likert's five-point scoring method is adopted. The higher the score, the higher the acceptance to I&P courses, based on which the application of computer simulation system for I&P teaching can be judged.

3. Test Results and Application Effect

3.1. Performance Test Results. The system is used in universities' curriculum education. Therefore, the normal operation of the system when all those who study the course use the system is considered in this study. The operation indicators mainly include the normal operation of the system and the response time of the system. The specific test contents are shown in Table 2 and Figure 9.

Table 2 shows the operation of the system when all users log in to the system and use the PPT in the I&P teaching system to

query. It reveals that when the number of users gradually rises from 10 to 500, the I&P teaching system can normally display the PPT uploader, upload time, and the course content.

Figure 9 explores the maximum response time required for course video upload operations and PPTs query operations as the number of concurrent users increases.

As illustrated in Figure 9, the maximum response time of the system gradually increases as the number of users increases during the ideological and political course video upload operation. When the number of users is 10, the maximum response time of the system is only 0.1 s. When the number of users is increased to 500, the maximum response time of the system is 6.6 s. During the PPTs query operation, the maximum response time of the system is 0.1 s when the number of users is 10. Even when the number of users is increased to 500, the maximum response time is also only 1.6 s. Combining the data in Table 2 and Figure 9 shows that the performance of the system is good. When the maximum number of concurrent users is 500, the system is running normally, all functions can be output normally, and the maximum response time is short, which is in line with the practical application demand of colleges and universities.

3.2. Function Test Results. The functions of the system are tested by logging from the student terminal and the teacher terminal separately, to further check the various functions of the system. The specific contents are as follows.

The I&P courses courseware management can smoothly realize the functions of viewing courseware and uploading information. The courseware PPT is undertaken as an example. It can view the relevant information by clicking the PPT, and the information is displayed in tables. The relevant information of the course PPT includes the name, picture, content, and submitter of the course PPT. 8 course PPTs are selected for display in this study, which are shown in Table 3.

The tests on the online discussion and the classroom feedback management indicate that the user can submit the online discussion information through the teacher terminal, and students can submit corresponding questions for the course. At the same time, information such as online discussion ID, online discussion content, and online discussion area information will be displayed in the system. In the classroom feedback management function, the user can click on the course feedback on the student terminal to submit the question information corresponding to the course and can click on the question information to submit the corresponding answer through the teacher terminal. The system can display the course feedback ID, course feedback content, course feedback time, and other information normally.

Based on the above-mentioned functional test results, it can be concluded that the system constructed in this study can perform the preset functions and operate normally without any failures, satisfying the actual application requirements of universities.

3.3. The Actual Application Effect. The results of the questionnaire survey of 53 students in this study are shown in Figures 10–13. Figures 10–13 show the attitudes of students

TABLE 2: The operation of the system under the largest concurrent user.

Number of users	Specific operation	Output content	System status
10	PPT query	PPT title, uploader, upload time, and course content	The system is operating normally
50	PPT query	PPT title, uploader, upload time, and course content	The system is operating normally
100	PPT query	PPT title, uploader, upload time, and course content	The system is operating normally
200	PPT query	PPT title, uploader, upload time, and course content	The system is operating normally
300	PPT query	PPT title, uploader, upload time, and course content	The system is operating normally
400	PPT query	PPT title, uploader, upload time, and course content	The system is operating normally
500	PPT query	PPT title, uploader, upload time, and course content	The system is operating normally

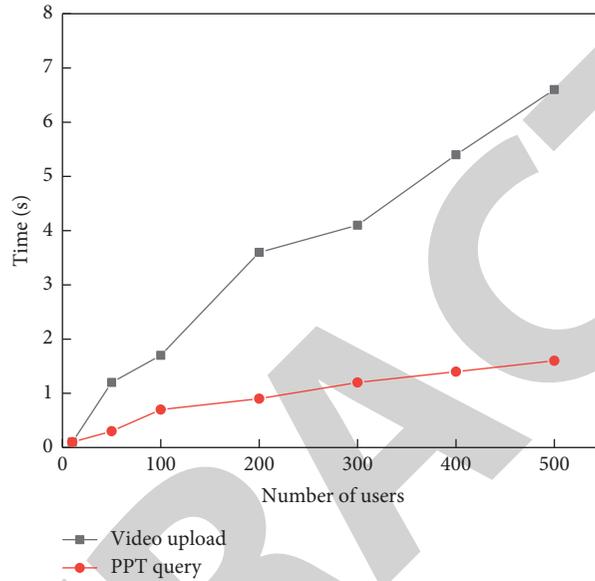


FIGURE 9: The maximum response time of the system running under the largest concurrent user.

TABLE 3: Test on courseware management of the system.

Serial number	Course PPT name	The content of the course PPT	Submitter of the course PPT
Number 1	Thought morals tutelage and legal foundation	Class 1	Y.X.W
Number 2	Thought morals tutelage and legal foundation	Class 2	Y.X.W
Number 3	Thought morals tutelage and legal foundation	Class 3	Y.X.W
Number 4	Thought morals tutelage and legal foundation	Class 4	Y.X.W
Number 5	Thought morals tutelage and legal foundation	Class 5	Y.X.W
Number 6	Thought morals tutelage and legal foundation	Class 6	Y.X.W
Number 7	Thought morals tutelage and legal foundation	Class 7	Y.X.W
Number 8	Thought morals tutelage and legal foundation	Class 8	Y.X.W

towards I&P courses, their satisfaction with classroom teaching, their acceptance of I&P courses, and their own learning, respectively.

Figures 10–13 indicate that, among the scores of a total of 16 questionnaires, the scores of using computer simulation system for I&P teaching are higher than those of using traditional methods for teaching. The differences in scores between the two teaching methods are very obvious. Among them, the largest difference lies in the 16th question, with a difference of 0.97 points, and the smallest difference is found in the 6th question (0.34 points). Analysis and calculation show that the scores of the I&P teaching model based on the computer simulation system are 0.66 points

higher than the scores of the traditional I&P teaching model.

Besides, the analysis on the computer simulation system for I&P teaching is performed further in the following four dimensions: the attitude of students towards I&P courses, their satisfaction with classroom teaching, their acceptance of I&P courses, and their own learning situation. The specific results are shown in Figure 14.

Figure 14 illustrates that, in the four dimensions of I&P teaching, the scores of using traditional teaching methods are 3.17, 3.06, 3.31, and 3.27 points, respectively, while the scores of using computer simulation system for I&P teaching are 3.88, 3.67, 3.93, and 3.96 points, respectively. In addition,

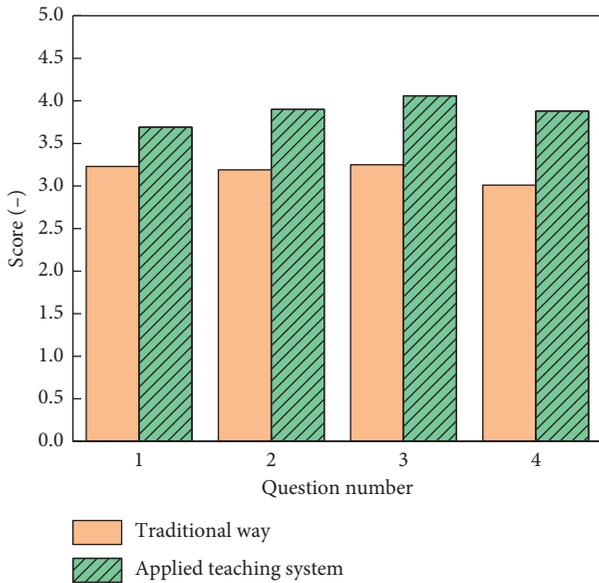


FIGURE 10: Questionnaire scores for I&P teaching attitude.

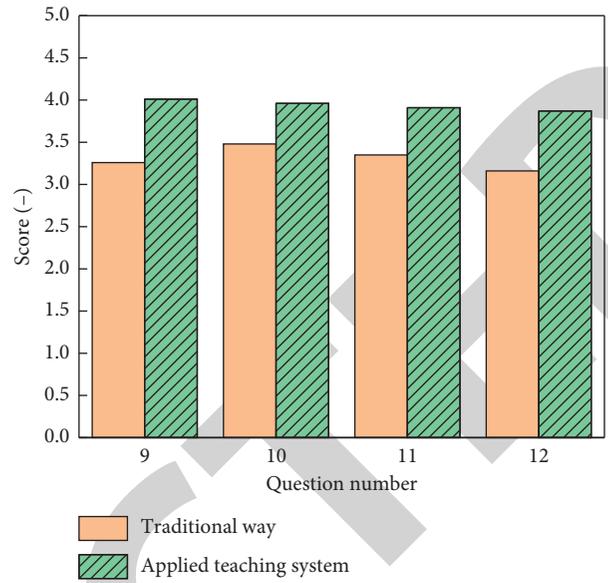


FIGURE 12: The scores of I&P teaching acceptance.

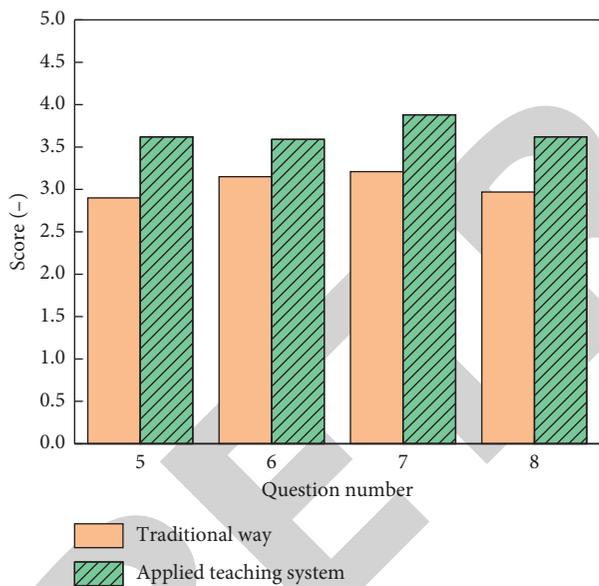


FIGURE 11: The scores of I&P teaching satisfaction.

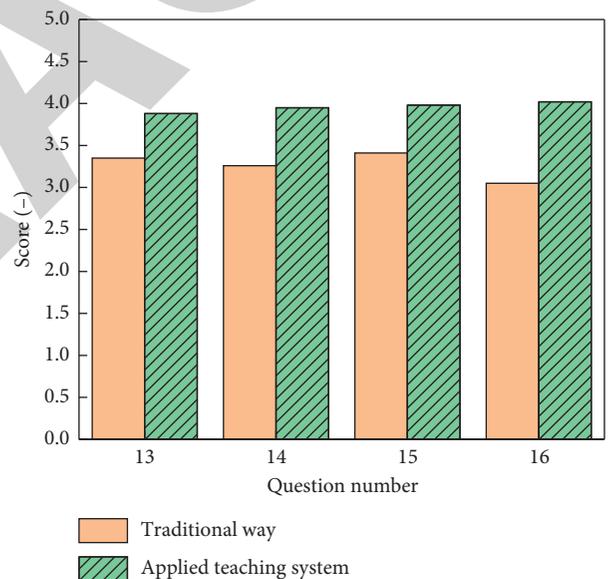


FIGURE 13: The scores of learning effect of students to the I&P learning.

the score differences in the four dimensions of using different teaching methods are 0.71, 0.62, 0.63, and 0.69 points, respectively. Among them, the use of the computer simulation system for the I&P teaching system has the most obvious effect in the attitude towards I&P courses. Based on the above conclusions, the teaching effect of the computer-assisted I&P teaching system is significantly better than that of the traditional method, which can effectively improve students' attitudes towards I&P courses, their satisfaction with classroom teaching, and their acceptance of I&P courses. Thus, it is conducive for students to grasp relevant ideological and political knowledge, and the system application effect is relatively good. However, there are still some

areas that need to be improved in the study due to the limitations of related factors.

The questionnaire survey is carried out on the teacher group to further explore the comprehensive role of the designed I&P teaching system. The questionnaire mentions 34 ideological and political teachers from 3 universities and explores the use of traditional methods and its comparison with teaching methods using the I&P teaching system. The specific content is shown in Figures 15 and 16. Figure 15 shows the willingness to use the I&P teaching system, and Figure 16 shows the analysis of the use effect of the I&P teaching system.

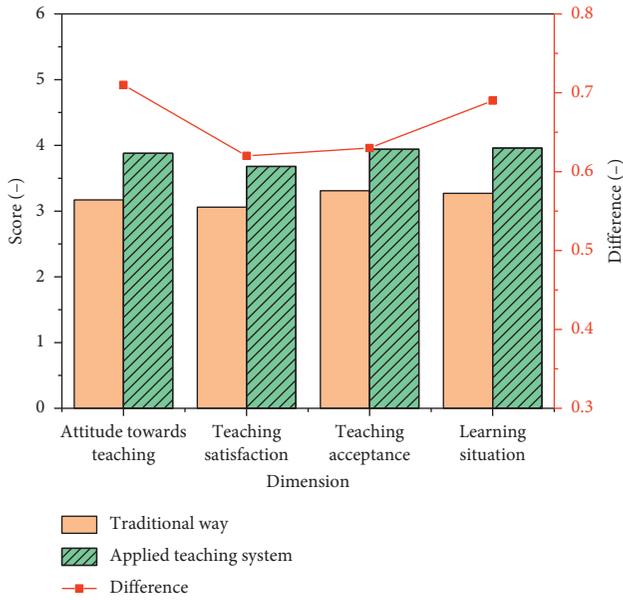


FIGURE 14: Statistics of average scores and differences in the 4 dimensions of I&P teaching.

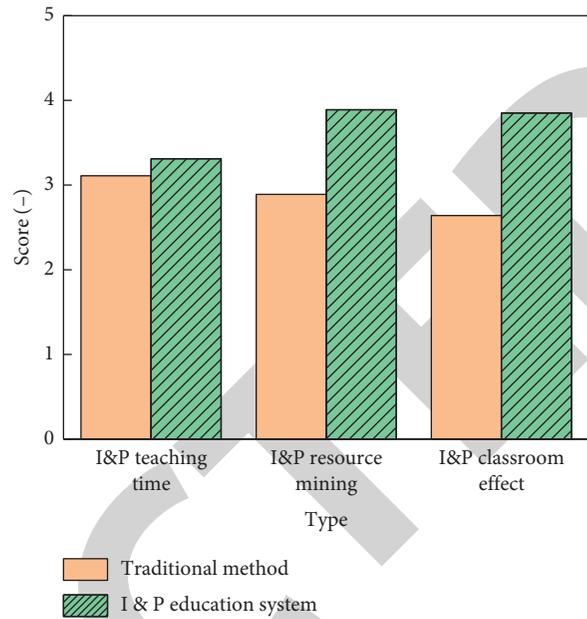


FIGURE 16: Application effect of I&P teaching system.

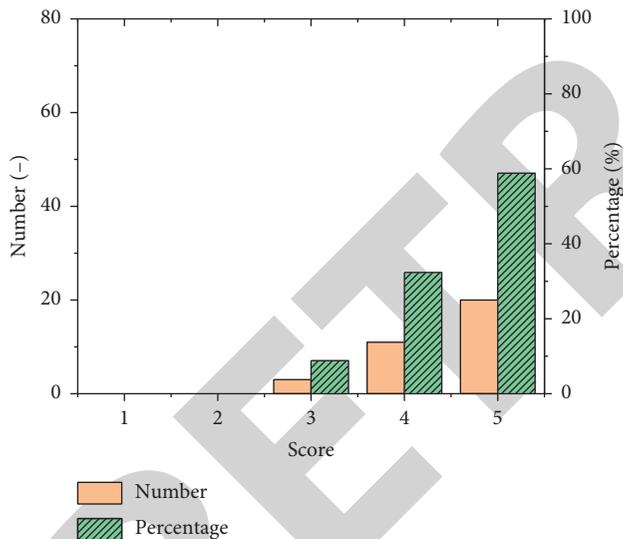


FIGURE 15: Teachers' willingness to use the I&P teaching system.

In Figures 15 and 16, scores of 1–5 refer to five grades from totally unacceptable to fully accepted. The higher the score, the better the teaching effect. The result of Figure 15 shows that all teachers have just shown great interest in using this I&P teaching system, and 58.8% of teachers have shown strong interest. The research results prove that this system has very obvious application advantages. As illustrated in Figure 16, in terms of I&P teaching time, I&P resource mining, and I&P classroom effects, the scores of traditional teaching methods are 3.11, 2.89, and 2.64, respectively, while the scores of using this system are 3.31, 3.89, and 3.85, respectively. Thereby, the differences between the two are 0.2, 1.0, and 1.21 scores, respectively. The research results show that compared with the traditional teaching mode, the

I&P teaching has obvious advantages in terms of deep mining of ideological and political resources and classroom teaching effects, showing good application effect.

Although this research can complete part of the classroom teaching functions, the interface design of the I&P education system, financial system, and educational administration system are not completed, and the interface design has to be modified. In the follow-up research, it will also conduct continuous optimization research on these two aspects to improve the practical application performance of the system.

4. Conclusion

This study focuses on the reform of I&P teaching and tests the performances and functions of the constructed system. At the same time, a questionnaire survey method is used to evaluate the application effect of the computer simulation system for I&P teaching. The main conclusions of this study are as follows: firstly, when the number of users is 500, the teaching system can normally display the uploader, upload time, and course content involved in the PPT query, so the system can operate normally. The maximum response time is only 6.6 s, which can meet the actual needs of universities. The I&P courses courseware management function, online discussion function, and classroom feedback management function of the constructed system can be used normally on both the teacher terminal and the student terminal. In addition, the application effect of the system in actual teaching is relatively good. In the questionnaire survey score, the score of the I&P teaching model using the proposed system is 0.66 points higher than the score using the traditional method, so the teaching model based on the proposed system can effectively better the students' attitudes towards I&P courses, improve the degree of satisfaction and

acceptance of classroom teaching, and promote the mastery of ideological and political knowledge. This study contributes to the intelligent development of ideological and political classroom teaching and has high practical application value and significance.

Data Availability

No data were used to support this study.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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