

Research Article

Design of Ideological and Political Multimedia Network Teaching Resources Integration System Based on Wireless Network

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The main purpose of the integration of network media and middle school ideological and political course is to better realize the moral education function of middle school ideological and political development. The use of resource integration technology to manage distributed teaching resources is conducive to improving the level of information construction in colleges and universities, and so on. This paper puts forward the integration system of ideological and political multimedia network teaching resources based on wireless network. Firstly, it presents an overview of the Radio Resource Management (RRM) problem and projected strategies within wireless network framework, where several Radio Access Technologies (RATs) are collectively controlled and identify the different activities relating to the CRRM issues. Secondly, this paper targets providing a summary of the RRM problem and projected solutions within wireless network. Thirdly, the theoretical elements of the design and the teaching resource management assessment process are clarified by using XML as the data exchange carrier to realize the automatic integration of teaching resources. Fourthly, we have used dSPACE platform, by calling its API function, which then call the subscribe function of dSPACE framework and store the subscription information in the database. Whenever new teaching resources enter the subscribed field, the dSPACE framework will automatically send e-mail to the subscribers. Finally, during the operation of the system, all functions operate normally and have strong security, so as to avoid the illegal theft or leakage of the data about the education system.

1. Introduction

With the rapid growth of the number of networked colleges, the mode of distance teaching and learning is constantly changing, which makes the characteristics of digitalization, networking, and interaction of distance education more and more prominent. Nowadays, network teaching has become one of the most important teaching modes [1]. Due to the heterogeneity and tight coupling of development platforms and tools, a large number of educational resource systems cannot be interconnected. The resource sharing and software reuse and the phenomenon of “Information Island” still exists in colleges and universities [2]. With the development of information technology in colleges and universities, the types of educational information resources are complex and diverse and disordered, the quantity is increasing rapidly, and the quality is uneven. In fact, these resources are still in

the low-level and low-efficiency repeated construction [3]. If we use the traditional way to integrate the existing education resource system, it will cause problems such as long cycle, large investment, and lack of unified standards, so it is difficult to fully ensure the orderly, intensive, and optimized resource integration services.

Practice teaching is a very important link in the teaching process of ideological and political theory course, which plays an important role in improving the effectiveness and acceptability of ideological and political education, but the current practice teaching effect in colleges and universities is not ideal [4]. Discussing the connotation, principles, structure, content, and evaluation system of the new practical teaching resource integration system for ideological and political theory courses will help break the theoretical research on the single and traditional practical teaching mode and open up the practical teaching system of ideological and

political theory courses in theory. The new field of research enriches the content of the current theoretical research on practical teaching of ideological and political theory courses [5]. Heterogeneous network technology integrates wireless networks to achieve the purpose of seamless docking, providing users with good service content. Centralized Radio Resource Management (CRRM) starts to carry out correlation function algorithm according to the received data information and transforms it into a feedback strategy that Radio Resource Management (RRM) can adapt to and hands it to RRM to calculate the instruction of the teaching system. The RRM utilities are largely accountable for the spectrum allotment of multi-RAT, where procedures for interference investigation and mitigation are applied. The network teaching resource integration system adopts B/S (browser/server), adopts a multilayer application system structure, and the user interface is realized through a Web browser and uses XML technology to effectively integrate teaching resources. With the “Model–View–Controller” (MVC) model as the concept, the overall structure of the system is designed in the form of Struts, and XML is used as the data exchange carrier to realize the automatic integration of teaching resources.

This article aims to provide an overview of the RRM problem and projected strategies in a within 4G and 5G framework, where several Radio Access Technologies (RATs) must be collectively controlled and to abstractly identify the different activities relating to the CRRM issues. This paper further targets to provide a summary of the RRM problem and projected solutions within 4G and 5G framework, where several Radio Access Technologies (RATs) must be collectively managed, in order to establish a wireless network for the ideological and political multimedia network teaching resources integration system.

The rest of the paper comprises the following. In Section 2, we present an indication of related works. In Section 3, we deliberate our planned work. In Section 4, we discuss the experimental effort. Lastly, the conclusion of this research work is discussed in Section 5.

2. Related Work

Tight integration of new information technologies with modern education and teaching is not just a significant growth policy for Chinese education but also a global trend. The researchers of [6] investigated how to generate the best Golomb size series in an elastic Wavelength Division Multiplexing System using a modern parallel hybrid multiobjective bat algorithm. Furthermore, the researchers have described and compared the natural heuristic-based algorithm for seeking close optical sequences in WDM channel allocation in [7]. In [8], the author discovered that artificial neural networks can learn the potential laws among outputs and inputs evaluate and measure new data and estimate required output via the research and analysis of input and output data. The nature of AI is no more its theory, but rather human purposefulness, conceptual structure, meaning, and everyday intelligence. The study findings of human subjectivity are still missing in the production of artificial

intelligence, and the work of integrating artificial intelligence production with ideological and political learning is also missing. Some experiments are biased and incomplete, focusing on only one aspect of artificial intelligence. Marshall McLuhan delivered a speech titled “The Digital Revolution: Modern Transformative Power of the Internet” at a national conference on higher education in March of the same year. As a result, the term “fresh start” is in the media spotlight for at minimum half a century, long before Marshall McLuhan’s address. However, as the community has seen, the term “digital media” has grown in popularity in the United States, since the 1960s, and the concept has since been adopted worldwide [9]. Much advancement in future network development has been rendered since more than 10 years of basic research discovery and research development [10]. In system architecture, there are many significant paths: information-centered systems, promoting cellular services, fusion systems that integrate computation awareness and memory, and systems that separate control plane and data plane, among others. Projects like Netlnf [11], NDN, and DONA are part of the information-centric system (ICN). This project’s aim is to depict the existing “location-centric” network [12]. It is capable of resolving existing network material, as well as repeated delivery as well as other problems. Transportation first [13] is the key representative of the mobility system. The infrastructure is currently focused on fixed end-to-end connections and is unable to meet the growing demands of mobile products and systems. A mobile scene-oriented core network [14] comes first. It could provide products such as vehicle connectivity and reliable mobile assistance. Computation, awareness, and memory incorporation can broadly incorporate view, computing, and memory into the system, allowing computing to lead transmitting, memory to assist propagation and breaking via the existing network’s simple single data transfer feature. This study will address a gap in the existing study by combining the creation of an ideological and political multimedia network teaching tools implementation system that relies on a wireless network, with the goal of further realizing the moral education role of middle school ideological and political courses.

3. Proposed Work

It is important to build a complete ideological and political multimedia network teaching resources integration system to ensure the creative growth of the ideological and political multimedia network teaching resources integration system based on wireless network. The system’s functions are split, and different roles are modeled using Extended Modeling Language (XML). The system functions are distributed into three separate roles based on the current investigation and study of multimedia network teaching tools integration system: network administrator, learners, and educators. It is all about the immediate conflict of views when teaching ideological and political courses. Learners are seen as involved people with their own opinions. Such data are collected, evaluated, and identified using data processing techniques and then through human-computer interaction,

using the previous acquired data, focused instruction, and support. Multimedia teaching resource integration, user login process control, electronic document control of instructional materials, investigation, launch, and use of electronic repositories of teaching resources, and Data Storage Resource Repository are the functions of the proposed framework.

According to the inherent characteristics of the network, heterogeneous network technology integrates wireless networks to achieve the purpose of seamless docking, providing users with good service content [15]. If the network utilization rate is to reach a certain high value, several wireless networks are required to achieve unified management through some technologies. In the 3GPP specifications, RATs such as WCDMA, local area network, and GSM/EDGE all realize their coordinated management through CRRM [16]. In this process, each RAT has played a very important role. The main responsibility of the RAT is to perform call admission control. At the same time, it also needs to be responsible for scheduling, HHO, and local power control (Power Control), as shown in Figure 1. Figure 1 shows that the CRRM Entity consists of Initial Rate Access Algorithm and Virtual Handoff Algorithm, interacting with RRM entities in bidirectional mode, that is, RRM measurement and RRM decision-making. This process may further be explained in Figure 1.

The core function of Centralized Radio Resource Management is to control the primary communication, which can be switched to different networks at will, after reasonable resource allocation, to further improve network utilization and use scheduling techniques to solve network congestion [17]. CRRM starts to perform correlation function algorithm according to the received data information and transforms it into a feedback strategy that RRM can adapt to and hands it to RRM to calculate the order. In the process of forming response points, the server's response continuously transmitted to PEP and then converts to a collective algorithm for execution.

3.1. Ideological and Political Multimedia Network Teaching Resources Integration System. Network ideological and political education is to use modern information dissemination technology, on the basis of inheriting and developing traditional ideological and political education, guided by Marxism-Leninism, Mao Zedong Thought, and Deng Xiaoping Theory. Use the basic principles of Marxism-Leninism and scientific knowledge related to psychology, behavior, communication, modern information technology, and so on to cultivate the socialist "four-property" "newcomer's educational activities" [18].

3.1.1. Integration of Wireless Network and Ideological and Political Multimedia Network Teaching Resources System. Every information technology, like Electronic Teaching Methods, now needs a wireless network. As a consequence, its incorporation is a must in order to avoid hardware and technological design implementation problems, as well as taking full advantage of the large quantities of data produced

by such a system and gain processing and analysis versatility. Finding helpful info from the Ideological and Political Multimedia Network Teaching Resource is a difficult task, particularly given the massive increase in data generated every week by online learning. To address this problem, wireless networks offer cutting-edge technology, approaches, and strategies that are both effective and simple to implement.

According to Figure 2, Cloud layer is the lowest point which is constructed with computing, storage, and network resources that are virtualized and distributed as resources via the WAN Link. The latter would be accountable for supplying virtual computing services required to provide e-learning applications with a suitable execution environment. In addition, the assets in this layer are scalable. This layer has the advantage of providing a scalable, robust, and fault-tolerant architecture. The Cloud layer, which involves decentralized storage systems and a Multimedia Streaming Server, is the 2nd layer of this strategy. Another is the e-learning layer, which contains information in the form of educational material, knowledge about the learner or teacher's record, course registrations, and so on. Such data are very valuable and will be effective in developing customized learning opportunities by adjusting learning material to the requirements of every learner in order to provide a better learning tool. The User Layer, which includes teachers, students, and administrators who want to access data from the Multimedia Streaming Server, is the final layer [19].

3.1.2. Integrated System Architecture. It is necessary to ensure that the system operates safely and stably in the network system of our hospital. The server side of this integrated system is the resource server in the security service area in Figure 3.

According to the overall construction goals and design principles of this system, the computer network teaching resource integration system based on the DSpace platform of our hospital adopts B/S (browser/server), which is browser and server structure design. Its architecture is shown in Figure 4.

The computer network teaching resource integration system based on the B/S mode adopts a multilayer application system structure and the user interface is realized through a Web browser [20]. Its overall structure is shown in Figure 5.

The core step of the automatic integration system of teaching resources is to create a cross-platform electronic archive with high portability and openness. A sign of the maturity of an automatic integration system of teaching resources not only includes the ability to automatically integrate information in electronic archives but also includes the electronic processing of required paper documents [21]. The system uses XML technology to effectively integrate teaching resources and encapsulates low-level APIs by programming the development environment to the object to complete the establishment of a practical object module with independent functions. The reason why XML can complete data exchange between different platforms is that it itself is a

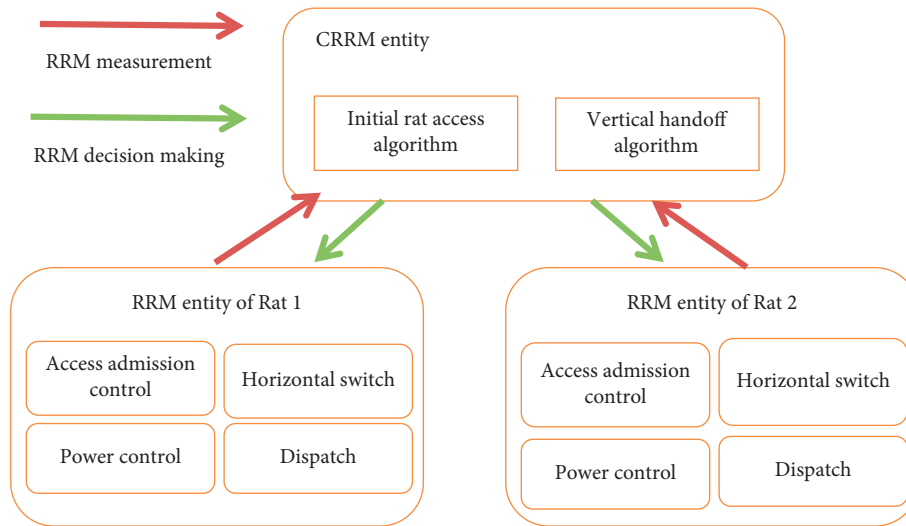


FIGURE 1: Radio resource management.

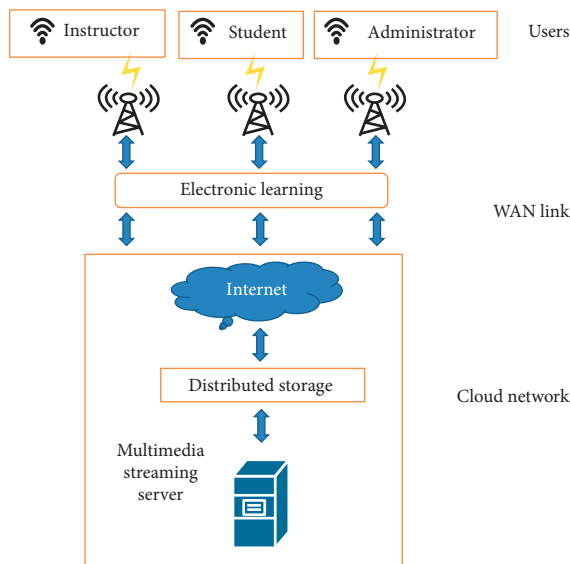


FIGURE 2: Integration of wireless network.

file format that exists in text form. The XML format file is composed of many parts that are described as elements, and tags are usually used to describe the elements. Therefore, the markup method is used to describe the XML file, and on the basis of ensuring the original data semantics and structure are unchanged, the Internet data exchange is carried out, and the flexible and lossless data exchange between different systems is guaranteed [22].

3.1.3. Student Module. In addition to being an intelligent system, the pupil module is also an intelligent system. Its knowledge base holds a variety of student learning habits. The student module's aim is to create a student model by determining the current learning development of individuals using various diagnostic methods. The entire data collection would be free of personal motivation and sentiment, guaranteeing the data's accuracy and reliability. The

pupil module primarily accomplishes two things. The first is to recognize students' errors, that is, to determine what kind of confusion or knowledge students lack in order to generate the currently incorrect response. The issue of "who is studying" is central to the design of the pupil's information condition. The pupil model explains how well students comprehend and control the material being taught. According to the particular conditions of the student model, ITS may adapt the teaching strategy as well as provide adequate feedback. The other is student conduct definition, which describes how students make mistakes.

3.1.4. Teaching Module. It is important to apply artificial intelligence principles in terms of information structure, reasoning processes, and natural language comprehension to resolve the limitations of conventional Computer-Aided Instruction (CAI). As a result, a number of experts have suggested smart teaching systems, as seen in Figure 6.

According to Figure 6, each topic has only single teacher user, who is able to build the question bank, examining examination papers and evaluating examination papers, and is referred to as the library construction teacher. However, in order to collaborate with the higher performance of teaching work, it is also important, in the current situation, to enable nonteaching teachers to temporarily gain access to topic question bank data in order to assist the teachers who are building the database in completing their work.

3.2. Multimedia Teaching Resource Integration System. Because MVC is only a design concept, not an application technology, the technical solutions designed by different designers in different fields based on the MVC concept are extremely different. Here, full consideration is given to the characteristics of the automatic integration of teaching resources, the confidentiality of relevant information involved in the integration process of teaching resources, and the universality of users of the integration of teaching resources. With the "Model-View-Controller" (MVC) model as the

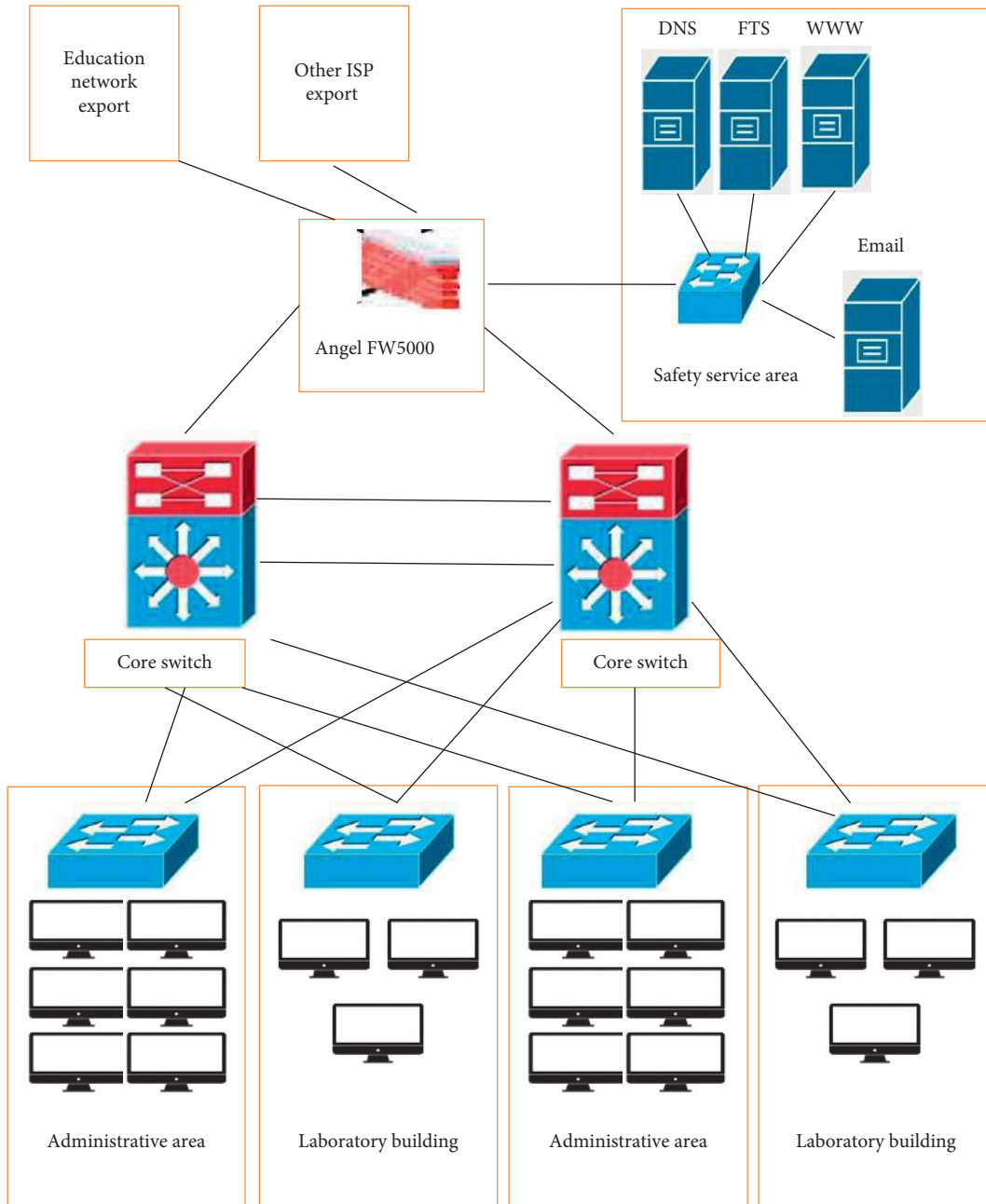


FIGURE 3: Network architecture system.

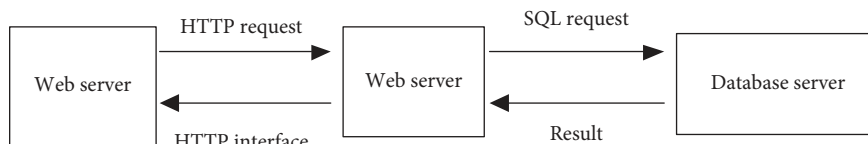


FIGURE 4: B/S architecture.

concept, the overall structure of the system is designed in the form of Struts structure, and XML is used as the data exchange carrier to realize the automatic integration of teaching resources. The result is shown in Figure 7.

The Struts system well interprets the concept of the MVC pattern, mapping models (Model), views (View), and controllers (Controller) to components in Web applications and integrates teaching resources into a unified framework. It

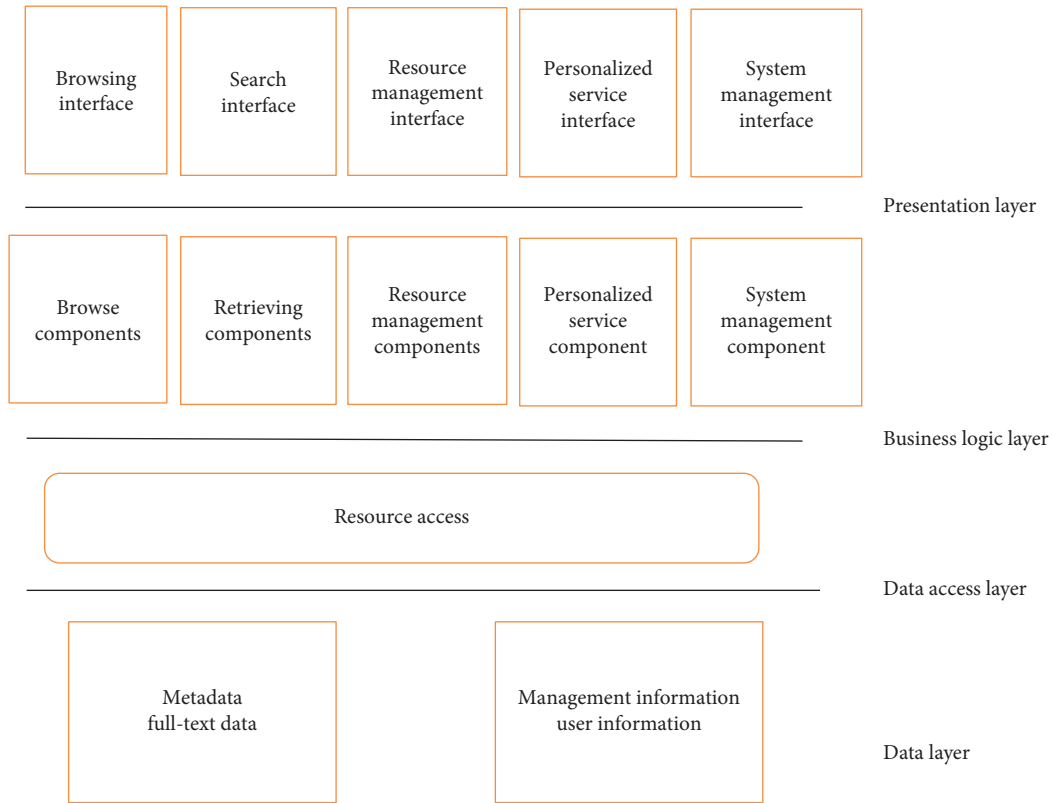


FIGURE 5: Overall structure.

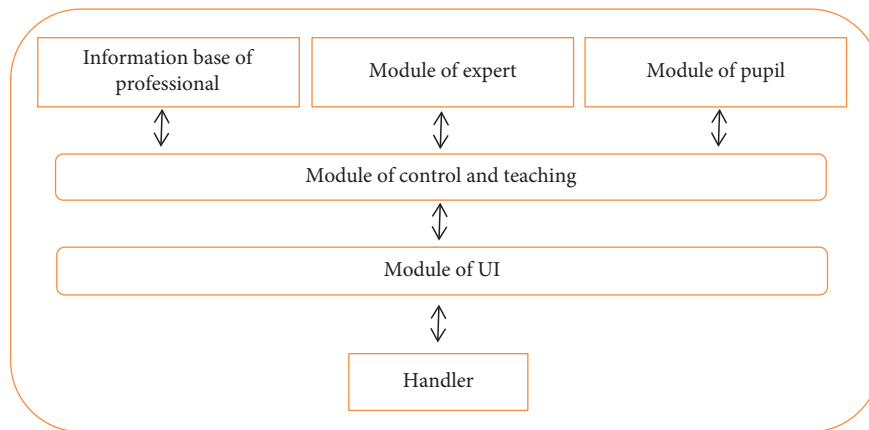


FIGURE 6: Teaching module.

provides a highly configurable MVC development model for Web development.

Based on the MVC hierarchical design concept, the system design adopting the MVC mode has the following advantages. (1) The separation of model, view, and controller allows a model to be displayed through multiple views. Expanding the control, other views can synchronously reflect the result of this control and realize the synchronous change of data. (2) The model has portability. Because the view of the model is relatively independent, if you want to port the model to a new platform, you only need to modify the view controller on the new platform. Therefore, the system's display

and behavior separation design based on the MVC model not only simplifies the system functions and reduces the difficulty of operation and the later maintenance cost of the system but also effectively isolates the storage resources of the electronic archives, enhances the security of system background data, and further promotes the automatic integration of system information resources [23].

3.2.1. User Login Control Management. Establishing user login for the ideological learning platform has the aim of considering the ideological platform's protection and

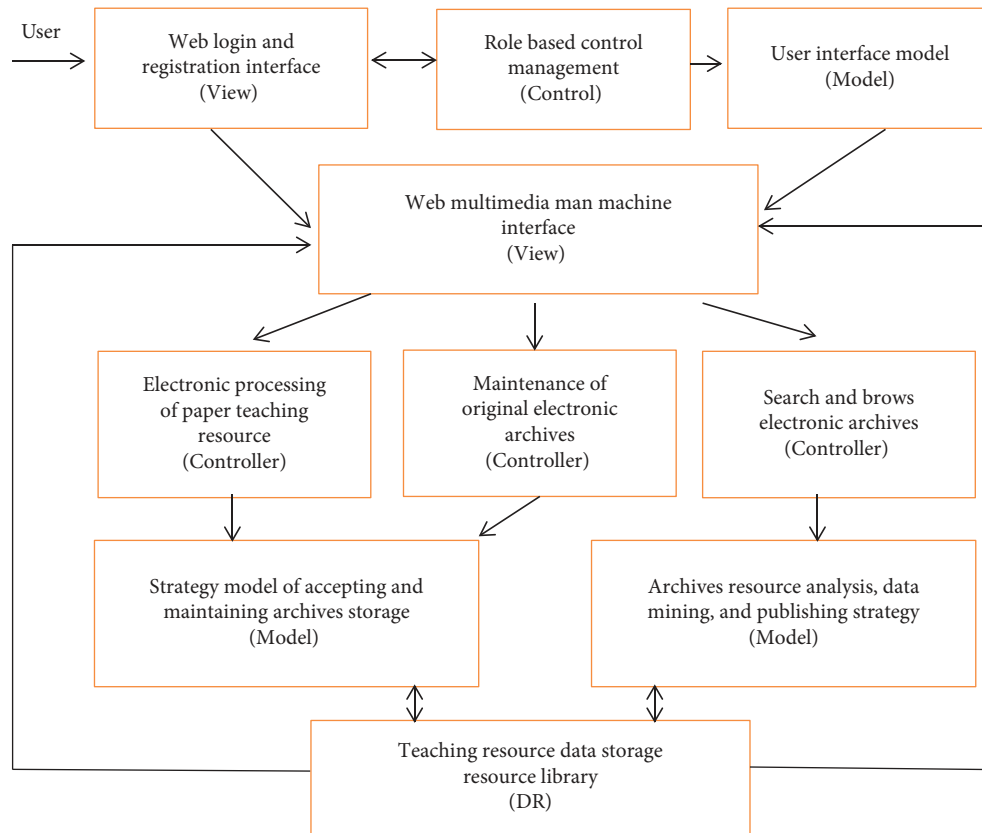


FIGURE 7: The functional structure design of the automatic integration system of teaching resources based on the MVC model.

adopting the user login process, which is also a statistical and monitoring tool for the academy’s ideological students, so it is best to know via the framework. The amount of people using the digital learning platform and the level of attention are both indicators of growth. The supplementary platform’s activity is an open platform focused on the campus network’s activity. As a result, relevant service frameworks for secure system operation, such as authentication system, gateway, and data integrity security, are needed to ensure the system’s and campus network’s security.

The system uses role control management to realize the distribution of role work authority, which is an important measure that reflects the humanization and rationalization of system design [24]. When users log in to the system or register on the Web interface (View), they need to be approved by the role management controller and generate the corresponding user interface (View) according to different users and enter the multimedia human-computer interaction interface (View) through the corresponding model (Model). In the actual application of the system, the user can only see the page display in the foreground and cannot understand the completion of the relevant functions of the background database. Therefore, when providing data to the user, the user needs to provide the user with relevant roles and permissions. The administrator sets the corresponding roles and related permissions according to the user profile information, and incorporates the setting results into the database. After the user authority is clearly completed, the user can use the unique

username and password to log in to the system and system applications within the scope of his authority. The operation flow chart of permission setting is shown in Figure 8.

3.2.2. *Teaching Resource Electronic File Management.* The management of electronic archives of teaching resources mainly includes the backup and restoration of teaching resources, among which the main objects of the backup and restoration of teaching resources are the file tables and file tables of electronic archives. Taking the backup of teaching resources as an example, the activity diagram is shown in Figure 9. According to the figure, the proposed Teaching Resource Electronic File Management is working in the following five stages:

Stage 1: during this stage, the user (Education System Administrator) provides his/her predefined ID

Stage 2: if this is valid ID then, this user can be able to log into the education system by submitting educational resource information backup request

Stage 3: in this stage, the interface of Web multimedia main machine swift to backup information of Education System Administrator

Stage 4: during this stage, the desired Education System Administrator enter backup information into the data backup of educational resources which then store in the database

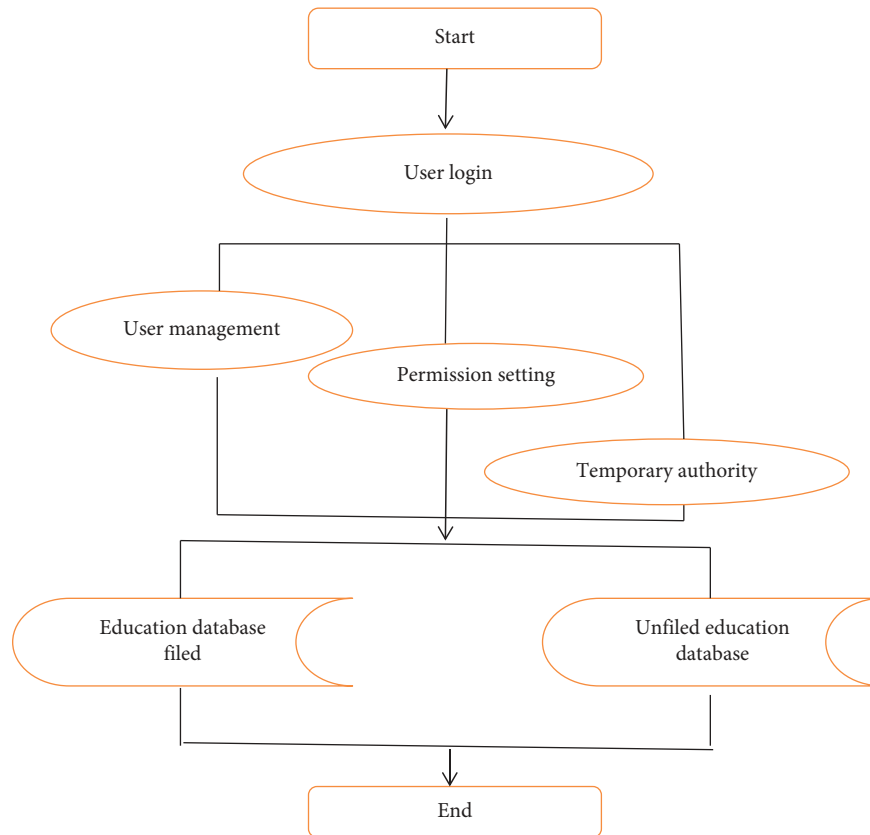


FIGURE 8: Operation flow chart of permission setting.

Stage 5: this is the final stage, during which the Education System Administrator displays success information from the database

In the process of teaching resource backup, firstly, the system administrator logs in to the system, sends data backup request to the Web multimedia human-computer interaction interface (view), receives the system prompt, inputs the teaching resource to be backed up, and after clicking the teaching resource backup, submits it to the database, completes the verification, and provides the feedback information to the system administrator.

3.2.3. Inquiry, Release, and Utilization of Electronic Archives of Teaching Resources. After the teacher user's request to query the electronic archives is sent out through the Web multimedia human-computer interaction interface (view), the best action execution method is sought through the archives resource analysis, data mining, and release strategy model, and the user's query interface (view) is returned through the graph, statistical report or target transformation data form. We archive resource analysis, data mining, and release strategy model (Model) after receiving the request from the controller; it will send the request to the database server and process the received information through specific strategies and methods. Data mining can be carried out if necessary. After all the above steps are completed, we release the teaching resources to the user view (View) that serves as the interface between the

system and the teaching resources. The digital archive information provided to users by the digital archive resource library is realized by the electronic archive query and browse (controller) through the strategy model (model); the purpose is to facilitate users to query the required information in the huge digital archive information [25].

Systematic teaching resource services should not be limited to simply providing original teaching resources but should realize the synthesis, analysis, and processing of original teaching resources, and realize automatic integration of information based on knowledge element processing and secondary or even tertiary information transformation. At the same time, according to the openness of electronic archives and the degree of information confidentiality, effective methods are adopted to filter, encrypt, transform, process, and integrate information to promote the maximization of teaching resource intelligence and knowledge. To achieve the highest level of automatic integration of teaching resources system services.

3.3. Data Storage Resource Library. In order to ensure that the system can perform effective data management and efficient storage in a specific application environment and cater to the actual needs of users; it is necessary to build a database and application system with a reasonable and effective physical structure and logical mode. The data storage resource library is to realize the automatic information of the system. The ultimate goal of integration is to design a data

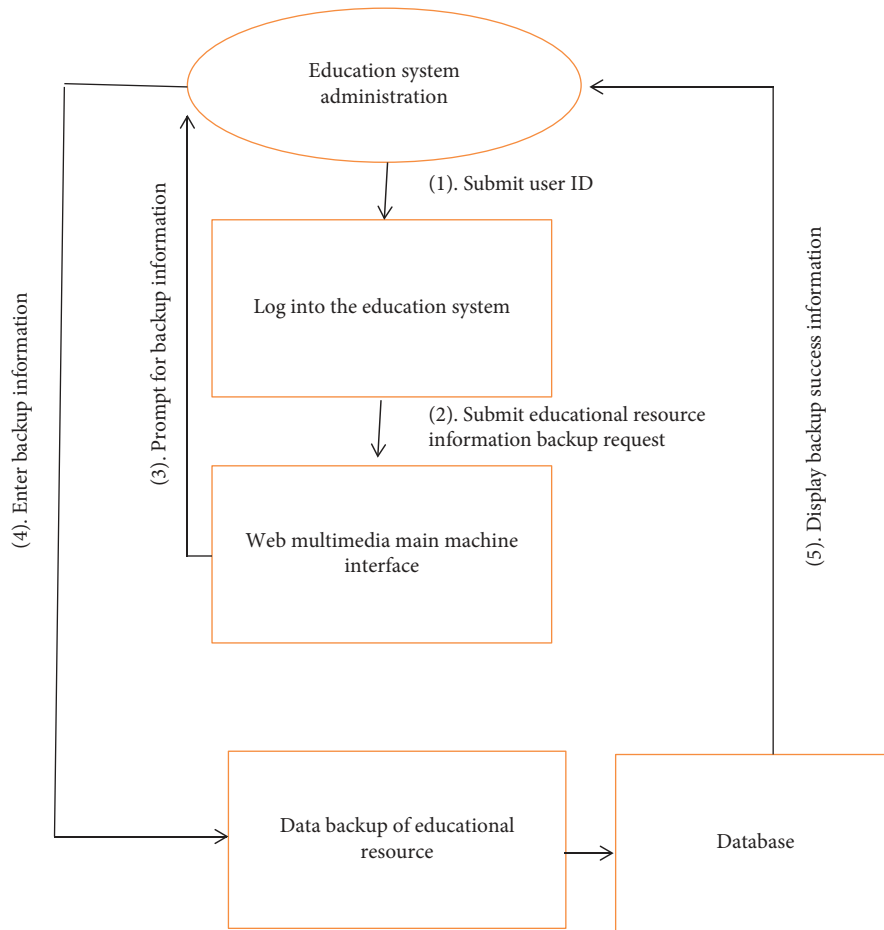


FIGURE 9: Teaching resource backup activity diagram.

storage resource library based on data requirements, physical structure, and logical mode. Relying on the Web computing method, using a convenient browser, without installing relevant software on the client side, the overall simple and fast operation of the system can be realized. The system data storage resource database includes photos, documents, and electronic archive data. The recorded electronic archive data mainly includes the electronic archive borrowing table, and return table. The specific composition information in the electronic archive borrowing table and return table is shown in Table 1.

The integration and download of teaching resources is the main design purpose of the teaching resources integration system. In the design of the function module, the powerful and perfect retrieval ability provided by dSPACE framework is fully utilized, and the browsing mode based on different standards is provided for the users of resources. Meanwhile, based on the technology of full-text retrieval and multicondition combination integration, the resource objects that can better meet the user’s needs are located more quickly and accurately. The flow chart of the browsing and integration function of teaching resources is shown in Figure 10.

dSPACE is a free software platform that enables us to collect, save, index, maintain, and spread digital content such as text, video, audio, and information. dSPACE gives us a way to keep track of our resources and articles in a professionally managed archive, increasing their exposure and availability across period.

With the following three functions, dSPACE offers access to research output, scholarly articles, and online libraries:

- (i) Encouraging the collection and consume of items, as well as metadata about the components
- (ii) Facilitating quick access to the materials, through both identifying and finding
- (iii) Encouraging the materials’ long-term protection

The design of browsing and integration function is mainly based on the application programming interface provided by dSPACE, and the secondary development and encapsulation are carried out according to the needs of users. For the browsing function, after the user specifies the browsing range and object, the API function of dSPACE is called, and the related parameters are input to get the result

TABLE 1: Educational resources electronic archives borrowing/returning table.

Field	Number	Name	Full name	Mechanism	Manager	Date
Type	Char	Char	Char	Char	Char	Date time
Length	5	55	15	15	25	10
NULL	No	No	No	No	No	No
Remarks	Primary key	No	No	No	No	No

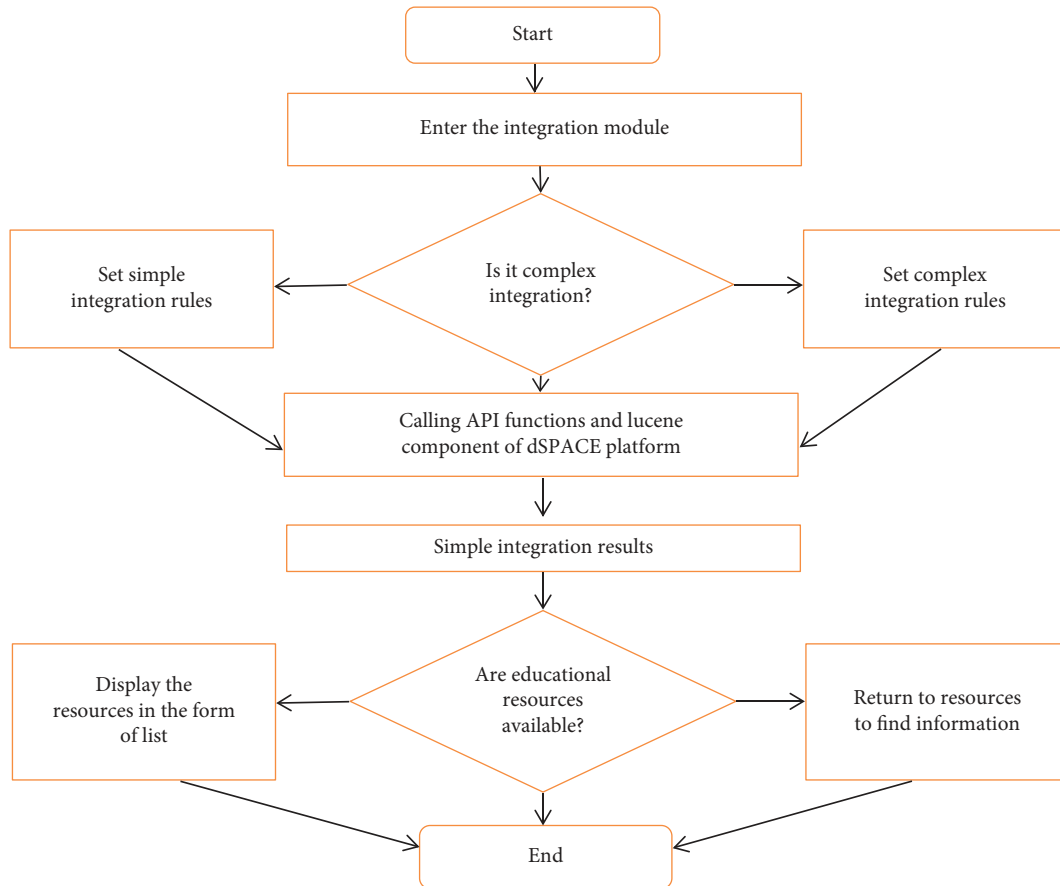


FIGURE 10: Flow chart of teaching resource integration function design.

information returned by dSPACE framework in the form of list, which is displayed in the user interface. For the integration operation, a combined integration mode based on multiple conditions is constructed. In the specific implementation process of the integration operation, the API function of dSPACE framework is mainly called, and Lucene full-text retrieval function of the framework is used.

In addition, in terms of the use of personalized resources, the subscription function of resources is designed based on dSPACE architecture. Every user of the integrated system can subscribe to the resources in a certain field in his working platform. The system function module will call the subscribe

function of dSPACE framework and store the subscription information in the database. Whenever new teaching resources enter the subscribed field, the dSPACE framework will automatically send an e-mail to the subscribers.

4. Experimental Study

4.1. Experimental Environment. The development environment of this system is based on the dSPACE framework, the Eclipse integrated development environment is installed, and the Java language is the main development language. By calling the API functions of the dSPACE framework, the

functional indicators to be completed in the system requirement analysis are realized. In order to ensure the normal operation of the system, JDK components, Tomcat components, and so on need to be installed in the development environment and configured according to the actual situation. In the choice of database management system, the PostgreSQL database management system is used, which is fully compatible with the dSPACE platform.

In the construction of the hardware development environment, Lenovo's Think Centre server is used as the application server and database server of the integrated system, and Huawei's products are used to build the network environment. The experimental tool is Load Runner, which can perform functions and simulate concurrent operations. The experimental operating system is Windows 7, the configuration tool is above IIS6.0, and the CPU is above Intel P4.

4.2. Experimental Program. Conventional testing methods include performance testing, load testing, stress testing, configuration testing, concurrency testing, reliability testing, failure recovery testing, and other test items. In the testing phase of the system, in addition to the regular functional tests, it is also necessary to conduct concurrent performance tests, which are triggered by multitask parallelism, such as uploading and downloading of questions, between teachers and students in a wireless network environment during the course of the class. To this end, testers have formulated concurrent performance testing strategies based on test requirements, set up corresponding test environments, and developed corresponding test cases.

4.3. Test Tools. In addition to the unit testing tool (NUnit) in the development process, some third-party tools, such as JMeter and Mercury LoadRunner, are required for performance testing during the development phase. Especially for session isolation under high concurrency conditions, XML data types involving I/O operations, and concurrent access optimization of exercise questions, we used JMeter as a testing tool to conduct corresponding tests.

4.4. Analysis of Results. For the student growth space experiment, the experimental example is shown in Table 2.

For the file management experiment, the experimental use example is shown in Table 3

For the file display experiment, the experimental use example is shown in Table 4

For the multivariate evaluation experiments, experimental examples are shown in Table 5

For the safety experiment, the experimental example is shown in Table 6

Analyzing the above experimental results, it can be seen that various functions of the education information integration management system based on the wireless network

operate normally and have strong security. In order to display the information in the process of student growth from all aspects, the student information is provided comprehensively from multiple angles and levels, and the security of the system during the operation of the system is controlled in terms of physical security, network security, and data security. Among them, the components of the physical security module are hardware devices that support the maintenance of the normal operation of big data, such as communication circuit equipment and power supplies, which provide energy support for the normal operation of the system. The network security module mainly protects the software and hardware of the system in operation, thereby improving data security, avoiding threats to data security due to external natural and human factors, and maintaining the continuity of system services. The main function of the data security module is to protect the integrity and security of information data transmission and storage and to prevent the education system information data from being illegally stolen or leaked.

The simulation results and expert evaluation results are shown in Figure 11. It can be seen from the results in Figure 11 that the simulation results are close to the evaluation results given by experts. In Figure 11, not only the training but also the error rate is kept below 1.5%. Therefore, the ideological and political multimedia network teaching resources integration system (IPNTRS) based on wireless network is a reasonable.

FTP files have been used to transmit 1 kB to 150 kB files for the purpose to capture real-time throughput data in the network in the very same simulation model. Figure 12 depicts the research findings for comparing the proposed IPNTRS with TCPW, CUBIC, and EBE. As a result, the throughput achieved was not pointedly different from the predicted value.

Figure 13 shows a detailed analysis of congestion connection utilization using the IPNTRS (ideological and political multimedia network teaching tools integration system), EBE, CUBIC, and TCPW protocols. TCPW was unable to efficiently use the expanded congestion bandwidth, and compression was extremely slow, owing to the data stream to be sent simultaneously. CUBIC was unable to absorb the expanded bandwidth in a timely manner and therefore converged steadily. It should be remembered, however, that although CUBIC's weak results as bandwidth climbed, its usage was still comparable to TCPW by using effective bandwidth identification. When connection bandwidth models were present, EBE was able to react quickly and attain approximately almost double usage during the simulation phase, suggesting that it outperformed CUBIC, unlike TCPW, CUBIC, and EBE, substantially increased congestion connection usage, but it was still smaller than IPNTRS. In conclusion, even though the wireless network's bandwidth is unreliable, the IPNTRS would still display high congestion connection usage.

TABLE 2: Experimental use cases of student growth space.

Test plan	Specific description
Functional module	Student growth space module
Test function points	Verify the correctness of the student space
Operating system	Windows 7
Testing purposes	Verification of student space browsing and editing functions
Testing process	(1) After the user logs in, enter the student space (2) Click into personal space (3) modify the personal space style, log, etc. (4) Click the save button
Result	Ability to modify personal space style and logs

TABLE 3: Example of file management experiment.

Test plan	Specific description
Functional module	File management
Test function points	Add file
Operating system	Windows 7
Testing purposes	Verify the correctness of the add file function
Testing process	(1) After the user logs in, enter the file management (2) Click Add File (3) Enter the file after the interface pops up (4) Click the save button
Result	Success

TABLE 4: File display experimental use cases.

Test plan	Specific description
Functional module	Archive display
Test function points	User profile management
Operating system	Windows 7
Testing purposes	Testing the archive display module
Testing process	(1) After the user logs in, enter the file management (2) Click on the student's profile (3) Click the save button
Result	Display student files normally

TABLE 5: Examples of multievaluation experiments.

Test plan	Specific description
Functional module	Multiple evaluation
Operating system	Windows 7
Testing purposes	Verify the function of the multiple evaluation module
Testing process	(1) The user logs in to the system and browses the student's profile (2) Evaluate student files (3) Click the Publish button
Result	Multiple evaluations were successfully published

TABLE 6: Safety test cases.

Test plan	Specific description
Functional module	Safety test
Operating system	Windows 7
Testing purposes	Verify system security
Testing process	(1) User registration (2) Fill in illegal characters in basic personal information (3) Query personal basic information after clicking save
Result	Invalid characters entered are not executed

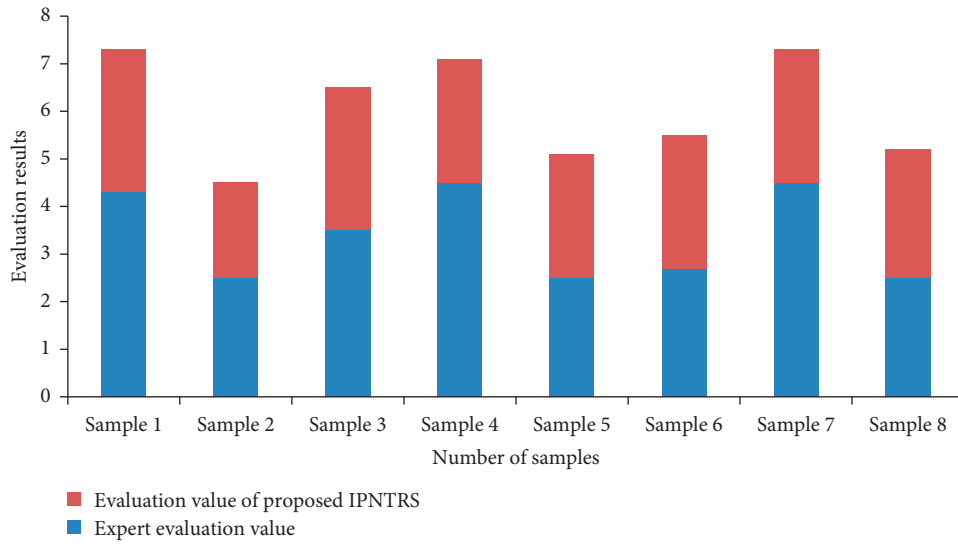


FIGURE 11: Comparison of evaluation results.

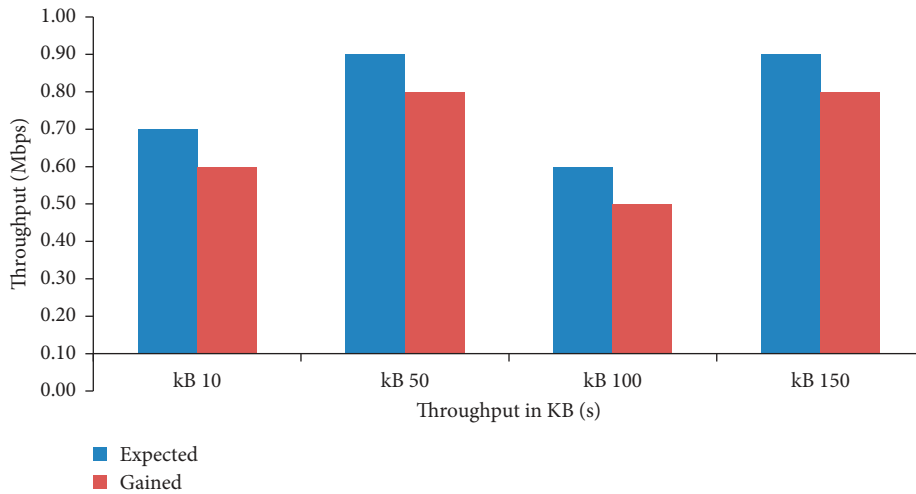


FIGURE 12: Comparison of throughput.

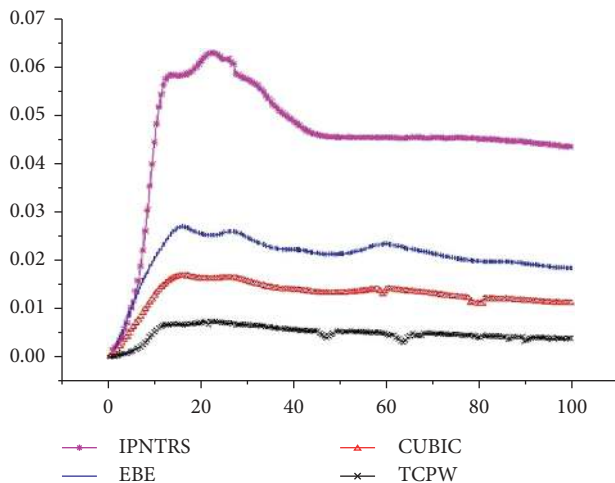


FIGURE 13: Comparison of utilization.

5. Conclusion

In this study, a wireless network-based ideological and political multimedia network teaching resources incorporation framework is proposed. The theoretical elements of the design and the teaching resource management assessment process are clarified. The structural design for the ideological and political multimedia network teaching tools integration framework based on wireless network in the big data setting is tested, driven by the model and mixed with current technologies. In addition, due to the lack of a unified management platform, valuable resources cannot be used effectively, which has a greater impact on the improvement of teaching efficiency. The use of resource integration technology to manage distributed teaching resources is conducive to improving the level of information construction in colleges and universities. The main purpose of the integration of network media and middle school ideological and political course is to better realize the moral

education function of middle school ideological and political course. Network media has gathered rich teaching resources of middle school ideological and political course, which helps political teachers coordinate the relationship between various elements in the teaching process, create a free and independent learning environment, meet the personalized needs of students, and make the whole teaching system run orderly and freely. The dSPACE framework has solved a lot of problems, but there are still many problems in human-computer interface interaction experience, resource management efficiency, resource sharing, and so on. The next research directions include the following. One direction is to further improve and perfect the organization mode of teaching resources and metadata structure, so that the system can better adapt to the query needs of Chinese resources and provide better user experience. The second is to focus on strengthening the research and support of the user's personalized demand function, using data mining and other intelligent processing algorithms, in addition to the subscription function provided by dSPACE framework, but also to provide intelligent teaching resource recommendation function for users.

Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflicts of Interest

The author declares that he has no conflicts of interest.

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