

Retraction

Retracted: Design of Teaching Video Resource Management System in Colleges and Universities based on Microtechnology

Security and Communication Networks

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This article has been retracted by Hindawi, as publisher, following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of systematic manipulation of the publication and peer-review process. We cannot, therefore, vouch for the reliability or integrity of this article.

Please note that this notice is intended solely to alert readers that the peer-review process of this article has been compromised.

Wiley and Hindawi regret 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 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] Q. Yan, "Design of Teaching Video Resource Management System in Colleges and Universities based on Microtechnology," *Security and Communication Networks*, vol. 2021, Article ID 9914048, 11 pages, 2021.

Research Article

Design of Teaching Video Resource Management System in Colleges and Universities based on Microtechnology

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The video management system in colleges and universities has become one of the most important platforms for video communication. In order to improve the storage and sharing of teaching video resource system in colleges and universities, this paper designs a teaching video resource management system based on micro grid technology. Through the construction of micro-technology + NAS network storage, the video network storage is realized, and the network sharing efficiency is improved. In addition, ASP.NET is used to develop video release and on-demand module, to meet the needs of users; through a variety of terminals in the presentation layer to display the relevant content, the design of video resource management system in line with the teaching needs of colleges and universities is completed. The experimental results show that the image processed by the system is smooth and delicate, the tone is realistic, and the system has good storage performance and high sharing efficiency.

1. Introduction

In today's society, video management system has been widely used and become one of the most important platforms for video communication. With the continuous development of information technology, in the world, major video websites, enterprises and institutions with relevant needs, primary and secondary schools and all kinds of training institutions have established their own video resource management system, which makes the video release and on-demand realize networking and information management [1, 2]. Today, the network classroom, micro class and MOOC are popular, so that high-quality teaching video resource management system is particularly necessary. At present, colleges and universities have basically built their own teaching resource websites. With the popularization of "flipped classroom" teaching mode and the development of network technology, micro class has become the main network teaching method. Its unique advantages of short content and numerous class hours greatly facilitate students to preview and review anytime and anywhere [3, 4].

In developed countries, not only colleges and universities have their own complete teaching resources and video

management platform, many primary and secondary schools and educational institutions have their own teaching video management system, through which students can watch and learn videos online, and ask questions and discuss online [5]. But at present, there are not many online video on-demand systems for education and teaching content in China. These online video systems related to education and teaching are mainly composed of the following categories: one is the education related sections in the major video websites; although the content is rich, the classification is messy, and the content is also uneven, some good and some bad; the second is the video management system in various educational institutions or online education platforms; this kind of management system is very restrictive for users, most of them can only be provided to the students or paid users, and the content is relatively single, generally only for a certain subject; there is another kind of campus education resource management system built by colleges and universities; although the resources are rich, the limitations of users are too strong. The excellent teaching content cannot be delivered to students in time, which hinders the development of education modernization and informatization. Therefore, it is imperative to use new technology to realize

the efficient management of teaching video resources in colleges and universities [6, 7].

Although the video management system of coal mine water exploration designed by Jin and Zhao [8] and the intelligent recognition management system of video linkage weighbridge weighing in coal mine designed by Yang et al. [9] can achieve target management, there are some defects in the operation of the management system, such as slow operation and low sharing efficiency. Agama and Solikin [10] aimed to develop the Learning Media Video Tutorials for Engine Management System (EMS) practices in the Automotive engineering class and experts validity revealed that the tutorial video for diagnosing EMS on a vehicle is good and feasible to be implemented in the classroom activities. Ghosh et al. [11] discussed the important role of video surveillance system in today's security applications. The need for surveillance systems has increased dramatically. The Internet of Things has made video surveillance more effective. The Internet of Things refers to a communications network of interconnected systems that can transmit information over the network without the need for human-computer interaction. The author summarizes the network traffic brought by video surveillance, the management of software-defined network and the application of Internet of Things in video surveillance system.

Starting from the actual needs, combined with the actual situation Asp.net technology, database technology and JWMedia Player open source platform and other technical knowledge, Zhou Li et al. design a video resource management system based on digital campus researched by, but it lacks of video resources, which can not fully meet the learning needs of class hours. Based on this, this paper designs a teaching video resource management system in colleges and universities based on microtechnology. The so-called microtechnology is a teaching method to train a certain skill in limited time and space by using modern recording, video and other equipment [12]. In this paper, system combines the advantages of micro grid technology with the development of ASP.NET architecture of Web platform, to design and develop the video resource management system from four levels of infrastructure layer, data resource layer, application layer and presentation layer respectively, which realizes the practical functions of the management system such as storage release and on-demand, effectively shortens the release cycle of teaching video, improves the timeliness of video transmission, and makes the system more convenient serving users in time, so as to improve the efficiency of video transmission, and meet the mutual learning and teaching resource sharing between teachers.

Generally speaking, the security of Management System operation and maintenance management is divided into terminal security, account management, identity authentication, access control, operation security, operation audit and data security. Data security governance takes "safe use of data" as its vision, covering three major goals of security protection, sensitive information management and compliance. Through the classification of the data, the use of the status of the carding, access control and regular audit, to achieve the use of data security.

2. Design of Teaching Video Resource Management System based on Microtechnology

2.1. Analysis of Microtechnology's Advantage. The construction and sharing of high-quality digital teaching resources is the basic engineering and key link of education informatization. By 2015, China has basically built a teaching resource and public service system with network curriculum resources as the core. How to develop and utilize high-quality digital teaching resources with high efficiency and quality is the focus of future work. Microtechnology provides favorable conditions for the realization of this idea.

Microteaching, also known as "small-scale teaching" in China, is a systematic method to simplify the teaching environment and enable users to get a lot of feedback. The teaching time is generally controlled within 5–10 minutes. With the rapid development of information technology microteaching system has entered the digital era. It integrates microteaching, multimedia production, data storage and video on-demand, and forms a set of multi-functional digital network system. It has the following advantages in video management of Microteaching:

- (1) The recording environment is the same and the organization is flexible. Micro classroom is composed of main control room and several small classrooms. Each small classroom has the same area and hardware configuration, and has good sound insulation (less than 60 dB) and shading effect. When multiple classrooms are used at the same time, they will not interfere with each other, so that the environment of the shooting scene is basically similar. Teachers can use a classroom for micro lesson video recording at any time, and schools can also organize multiple teachers to record micro lesson video at the same time. The organization method is very flexible, which greatly improves the recording speed of micro lesson video [13].
- (2) The technical label is unified and the post-processing is convenient. The number and model of lighting equipment in each small classroom are the same, the brand and model of cameras are the same, and the multi-channel video acquisition parameter settings are completely consistent; the recorded micro lesson video is of high-definition image quality, and the resolution is more than 1280×720 ; the file format is the mainstream AVI format and ASF format (network streaming media format); the unification of technical standards brings convenience to the post batch processing and improves the production speed of micro lesson video.
- (3) Teaching process is real-time feedbacked, so the efficiency of micro class video recording is high. After the end of the teaching, teachers and instructors are organized to watch the video together. Firstly, the teacher carries out self-analysis to check whether the teaching process has reached the

expected goal, points out the areas to be improved, and completes “self-feedback”. After that, the instructor makes a collective evaluation on the teaching process of the teachers and finds out the shortcomings. According to the feedback, the instructor can make improvement demonstration and record the course again. The on-site classroom feedback timely solves the problems existing in the course video, and improves the recording efficiency of micro class video.

- (4) The course video management is more convenient and the network sharing is faster. The course video recording system is a large capacity storage server supporting on-demand function of network. Its main functions are: firstly, multi machine video shooting, including teachers’ frontal teaching lens and students’ listening lens, and synchronously capturing teachers’ computer screen content; secondly, automatic generation of text index. The system can automatically capture the contents of teachers’ PPT and Word references; thirdly, real-time acquisition and coding, and real-time compression; fourthly, video editing, you can cut and delete the recorded video and add video course titles and endings; fifthly, web-based video course on-demand, the system integrates the video website, and users can demand the published video courses through the browser; sixthly, the storage capacity can be expanded in real time to support raid data management; seventhly, firewall can be installed to protect the safe operation of the system.

2.2. Overall Structure of the System. The video resource management system is composed of platform and several databases, including general user database, internal personnel database, video resource database, other resource database, etc. The main design goal of the system is to improve the effectiveness of the use of teaching resources. According to the different needs of different users, the main functions of the system are also different. For teachers, it is necessary to shorten the time from upload to release, improve the timeliness of video transmission, so that the video can serve users in time, improve the efficiency of video transmission, and help teachers learn from each other and share teaching resources; for students, the new way of video on-demand online and online interaction improves students’ learning enthusiasm and initiative; for parents, the system strengthens the interaction between home and school, so that parents can better understand the children’s learning situation, and can communicate with teachers in a timely manner; class teacher users can easily supervise and master the students’ learning situation after class; discipline leaders and school leaders can strengthen the understanding of teachers’ teaching situation, teaching progress and professional level through various functions of the system [14].

The overall architecture of video resource management system is divided into four layers, namely infrastructure layer, data resource layer, application layer and presentation

layer. It consists of a platform and several system function modules and interfaces. The overall technical architecture of the system is shown in Figure 1.

2.2.1. Infrastructure Layer. The infrastructure layer provides a suitable physical place for the construction of video resource management system, mainly including server, operating system, network equipment and so on.

2.2.2. Data Resource Layer. The role of data resource layer is to provide data support, that is, database. All kinds of databases are in the management mode of data management and control system for scientific and effective classification organization. The data resource layer stores the data information of the system, and can search the data information.

2.2.3. Application Layer. On top of the data resource layer, based on the ASP.NET Architecture of Web platform, various application modules are developed, including video publishing subsystem, video on-demand subsystem and system management subsystem. The user sends out the request operation in the presentation layer, and the application layer performs the corresponding operation in the data resource database according to the instruction, and then feeds back the result to the user.

2.2.4. Presentation Layer. Through PC application terminal, hardware application terminal and browser, it can provide services for teachers, students, parents, discipline leaders, school administrators, educational administrators and system administrators. Overall technical architecture of the system is shown in Figure 1.

2.3. Function Module of the System

2.3.1. Video Network Storage Module Based on Microtechnology

- (1) Storage analysis of micro classroom

In the micro classroom, the HD video signal captured by the camera is transmitted to the control room, and three channels of signals are generated by the audio and video processor. One channel is transmitted to the TV wall for real-time monitoring, the second channel is transmitted to the TV wall of the observation room for real-time monitoring, and the other channel is transmitted to the recording system, as shown in Figure 2.

The recording system compresses the input video signal in real time and stores it on the hard disk in the form of digital signal. The video format can be set according to the demand. The collected micro lesson video can be edited by the system’s own non editing software. The micro recording system is also a streaming server, and the client can watch the edited micro lesson video on-demand in real time by means of web page [13]. However, if the micro recording

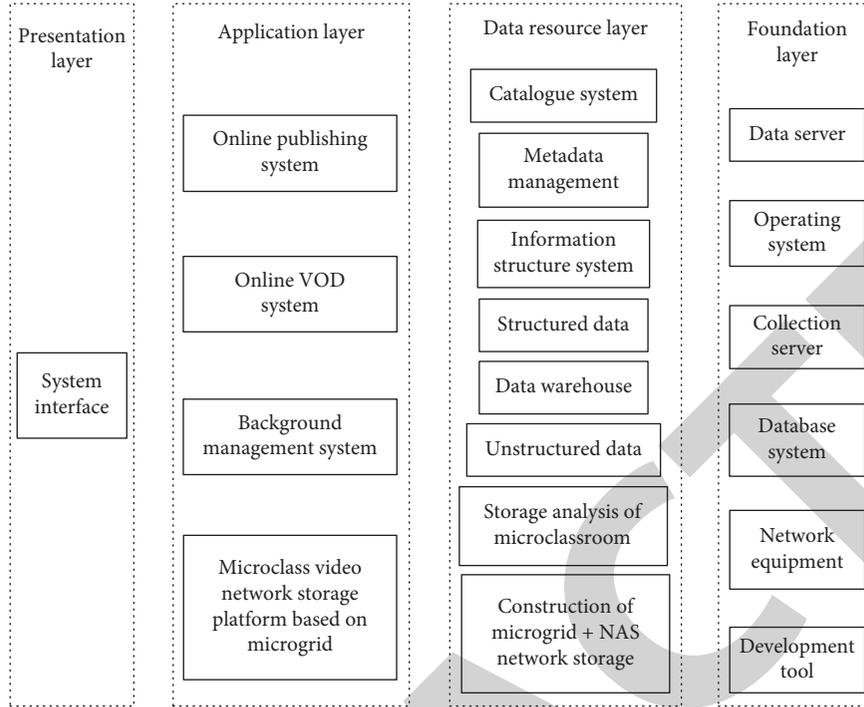


FIGURE 1: Overall technical architecture of the system.

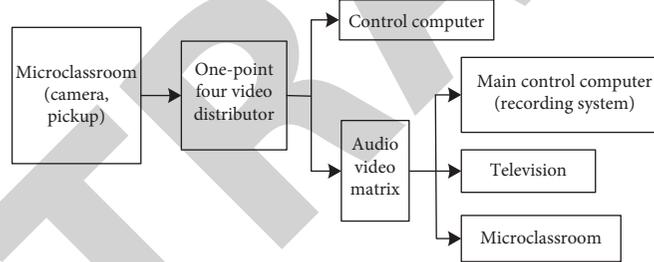


FIGURE 2: Schematic diagram of microgrid.

system is used as a file server to provide micro lesson video management and sharing, it will encounter many problems: first, the video file storage capacity is large, and there is a bottleneck in the hard disk capacity; second, the number of users' access is too large, which takes up a lot of system resources, seriously affecting the system speed; third, the recording system does not support 7×24 hours of uninterrupted work; fourth, it is more complex for the recording system to make Raid set.

(2) Image enhancement based on multi-scale Rrtinex algorithm

The sensitivity of human vision system (HVS) to color is usually lower than that to brightness. In view of the good effect of MSR algorithm for gray image enhancement, this paper uses MSR algorithm to enhance the brightness component Y [15, 16]. Compared with the traditional MSR enhancement of R , G and B components in RGB space, the proposed method can save nearly $2/3$ of the workload.

(a) Enhancement of brightness component

Let $P(x, y)$ be the brightness component of the video image directly obtained by the recording system. The operation process of the brightness component $P(x, y)$ obtained after enhancement processing is as follows:

$$P'(x, y) = \sum_{i=1}^m w_i \{ \lg P_i(x, y) - \lg [F_i(x, y) * P_i(x, y)] \}, \quad (1)$$

where i is the number of scales used for the enhancement operation. When the number of scales is more, the enhancement results will give better consideration to both dynamic range compression and contrast enhancement, but at the cost of increasing the amount of computation. When $i=1$, it becomes SSR algorithm. In this paper, three Gaussian scale parameters $s = 12, 65200$ are selected for the center/surround environment function.

(b) Enhancement of chromatic aberration component

Due to various external factors in the recording process of the recording system, the scene in the video image may appear white phenomenon, and the color difference components U and V of the image are low, so it is necessary to enhance the two-color difference components U and V in YUV space. Considering the balance between the complexity of the algorithm and the processing results, the color difference components U and V are linearly stretched.

Linear stretching is a simple and effective method to adjust the color difference component. According to the “ $3e$ ” rule of Gaussian distribution, that is, for normal random variables it is allowed that their values fall within the interval $[m - 3e, m + 3e]$. Therefore, for the two-color difference components U and V , the value range after stretching is as follows:

$$\begin{cases} U_{\min} = U_{\text{mean}} - 3e_U, V_{\min} = V_{\text{mean}} - 3e_V, \\ U_{\max} = U_{\text{mean}} + 3e_U, V_{\max} = V_{\text{mean}} + 3e_V, \end{cases} \quad (2)$$

where, U_{\min} and U_{\max} are the minimum and maximum values of color difference component U ; V_{\min} and V_{\max} are the minimum and maximum values of color difference component V ; U_{mean} and V_{mean} are the mean values of color difference components U and V , and e_U and e_V are the standard deviations of color difference components U and V , respectively. The output of the color difference component of the stretched image is as follows:

$$U_{\text{out}} = \begin{cases} 0, & U_{\text{in}} \leq U_{\min}, \\ \frac{U_{\text{in}} - U_{\min}}{U_{\max} - U_{\min}}, & U_{\min} < U_{\text{in}} < U_{\max}, \\ R_{\max}, & U_{\text{in}} \geq U_{\max}, \end{cases} \quad (3)$$

$$V_{\text{out}} = \begin{cases} 0, & V_{\text{in}} \leq V_{\min}, \\ \frac{V_{\text{in}} - V_{\min}}{V_{\max} - V_{\min}}, & V_{\min} < V_{\text{in}} < V_{\max}, \\ R_{\max}, & V_{\text{in}} \geq V_{\max}, \end{cases}$$

where U_{in} , V_{in} and U_{out} , V_{out} are the input and output of U and V components respectively, and R_{\max} is the dynamic range of the output device.

(3) Construction of microtechnology + NAS network storage

NAS storage system is a network storage device that supports IP access, has strong expansion ability, supports uninterrupted work, and has its own Raid data backup function [17, 18]. The recording system is connected with the

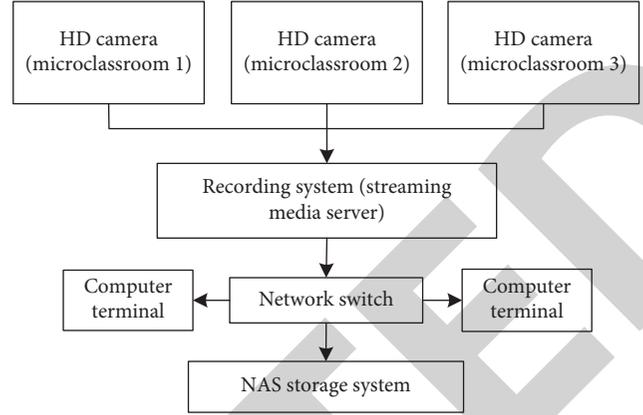


FIGURE 3: Network storage platform of micro lesson video.

NAS storage system through the switch to build a storage platform of micro lesson video management network (as shown in Figure 3). The edited micro lesson video can be directly transmitted to the NAS storage system for storage through the campus network. As an extension of the micro recording system, the NAS storage system can be placed anywhere within the scope of the LAN, mainly providing media file sharing service, the client directly access NAS network storage devices through the network; this not only reduces the burden of the recording system, but also improves the efficiency of network sharing; NAS storage system comes with Raid data management function, which supports 7×24 hours of uninterrupted work and hardware plug and play expansion, to maximize the security of data [18].

The management of micro lesson video is different from the traditional electronic management of paper archives. It is a product of highly simultaneous interpreting of multimedia technology, network technology and storage technology. The information technology requirements for managers are relatively low [19]. After years of development, microtechnology organically integrates classroom teaching, video recording, network on-demand, mass storage and other functions, and has become a perfect solution for micro lesson video management [20, 21]. Through the establishment of micro lesson video management system, colleges and universities can accumulate rich excellent network teaching resources, which not only promotes the development of education informatization, but also lays a solid foundation for the extensive use of excellent digital teaching resources.

2.3.2. Video Release Function Module. The main users of the video release function module are teachers, discipline leaders and school leaders. Teachers upload videos and other teaching resources, while discipline leaders and school leaders review and release videos.

The video release function module is divided into four sub function modules: user information management, video upload, video audit and video release. Information can be added, maintained and managed in user's management sub module. In the video upload function sub module, there are two parts: video information management and video

management. Users can add and maintain video information, upload videos, and delete and modify videos that are in two states of pending approval and failed. The users of the two sub modules of video audit and video release are only subject leaders and school leaders. These two types of users can audit the videos, video information and other teaching resources uploaded by teachers. The difference is that the person in charge of the discipline is only responsible for the teachers of the discipline, while the school leaders can audit all the videos and teaching resources uploaded by the teachers. If the review is passed, the video status will be changed to published and the video will be published to the platform. If the review is not passed, the review opinion will be given and the video status will be changed to not passed. The video release function module is shown in Figure 4.

In the video release function module, the teacher user first uploads the video, generates the upload form, and then sends the upload form data to the pending end. If the review is passed, the video is released, and the video status changes to published. If the review is not passed, the information of the review opinion will be returned to the teacher user, and the video status changes to not passed [22].

2.3.3. On-Demand Function Module. All kinds of users in the system have the right to video on-demand, and the main users are ordinary users such as students and parents. Ordinary users can find video and teaching resources, watch on-demand, ask questions and discuss online through the function module.

In the VOD function module, there are two sub function modules, video search and video playback. All users have the same permissions, that is, they can search online and search video resources by inputting keywords or classification. The video playing function module can realize the online playing of video resources, but it does not provide the function of video downloading for ordinary users. In the online comment module, all kinds of users can ask questions or express their opinions in the discussion area. Users with query and statistics permissions can count the amount of video collection, video on-demand, video playing time, etc. Due to different permissions of various users, the content of query and statistics is also different. The diagram of VOD function module is shown in Figure 5.

The specific process of VOD is as follows: users log on to the platform. If they are new users, they need to register first and fill in the user's personal information before they can log on to the platform. If it is not a new user, it can log in directly with the user's name and password. Users can browse the information of all uploaded video resources online and select the video they want to watch for VOD.

3. Experimental Results and Analysis

In order to explore the effectiveness of the teaching video resource management system in colleges and universities based on microtechnology in Web2.0 environment, an empirical study is carried out on the basis of the created

learning environment, combined with a class of Bioscience major in a university department.

The development environment, operation configuration and test configuration include hardware environment, software environment and bandwidth requirements of network communication, as shown in Table 1.

3.1. Video Image Enhancement Test. In order to verify the effectiveness of the system in improving the quality of video image, this paper selects the pictures recorded by the system in the dark environment as the experimental materials, and carries out image processing in the Web2.0 experimental environment. The test results are shown in Figures 6 and 7.

By comparing the visual effects of the four images in Figures 6 and 7, we can see that the two original images are dim, weak contrast, fuzzy details, and serious noise interference; after the system processing, the image is smooth and delicate, the tone is realistic, and the brightness and color are greatly improved, which shows that the image enhancement effect of the system is better.

3.2. System Performance Test. The main carriers of the system are web pages, forms and interfaces. To verify the system performance through the following two experiments, one is to detect whether the links can point to the correct location, and have the corresponding return links to avoid dead links; the other is to test the form function, and check whether all kinds of forms can be filled in and submitted normally, and the submitted data can be saved in the corresponding server; finally, the stability of the interface and the speed of the system is tested. The specific performance test results are shown in Table 2.

It can be seen from Table 2 that the system in this paper has not achieved 100% completion rate in video release statistics and video on-demand statistics. This is due to the wrong storage format of human operation in the process of video saving, resulting in few errors in the system for video statistics. In general, this system has the advantages of comprehensive function and perfect performance, and has high applicability in the management of teaching video resources in colleges and universities.

3.3. System Running Speed Test. In order to verify that the system in the teaching video storage and running performance, prevent the excessive number of users for resources and affect the speed of system running. The paper adopts the system in this paper and the water exploration video management system in coal mine in reference [8], the video linkage weighing intelligent identification management system in coal mine in reference [9], the video surveillance systems in reference [23] and the Hyper Converged Video Management System in reference [24] to carry out the comparison experiment of system running speed. The experimental results are shown in Figure 8.

It can be seen from Figure 8 that in the operation process of the three comparison systems, in the case of the same number of visits, the system in reference [9] has the slowest

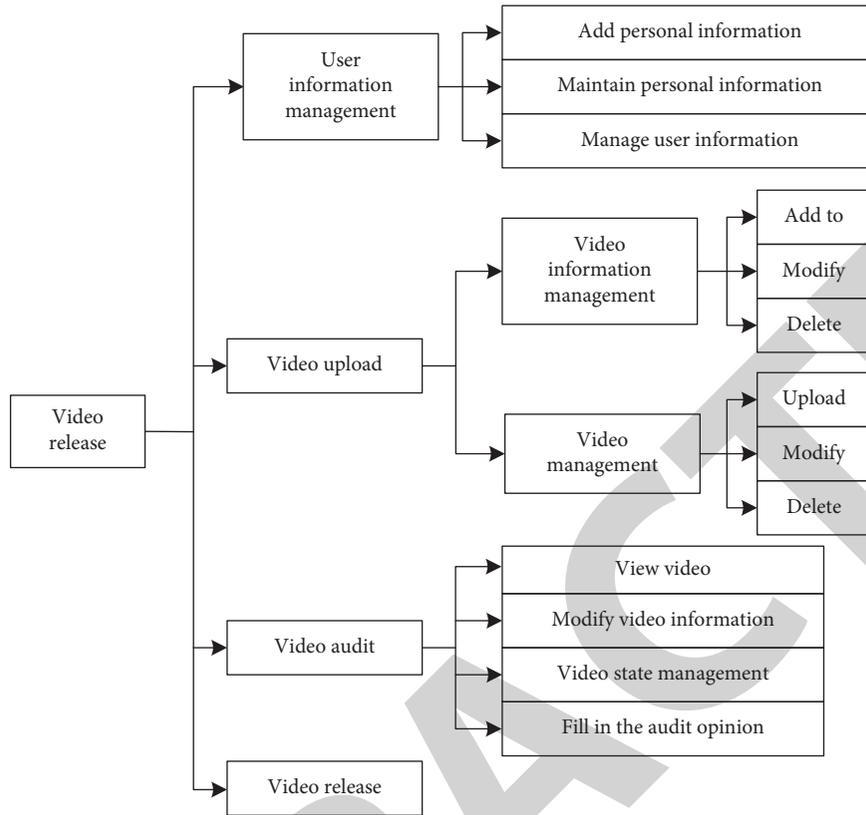


FIGURE 4: Video release function module diagram.

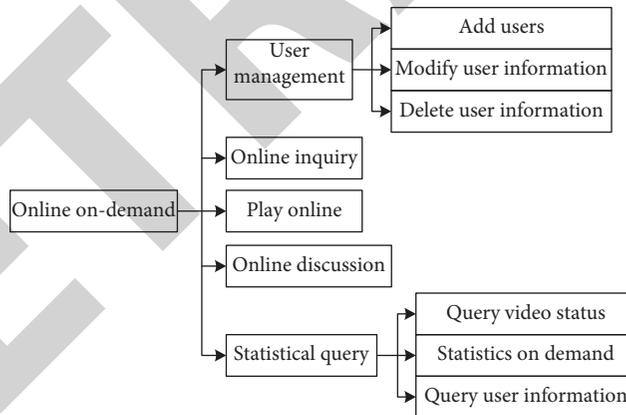


FIGURE 5: VOD function module diagram.

TABLE 1: Configuration of development environment, test environment and running environment.

Category	Testing environment	Operating environment
Hardware	Current PC mainstream configuration	Dawning machine, CPU 2G, Memory 4G, Hard disk 140 g, Internal and external network 100 m, A network card, Isolation equipment
Software	RedHat Linux AS 3	RedHat Linux as 3, Isolation driver and interface library files
Network communications	100 m LAN	Network connected to each campus network outlet
Other	Power supply and network cable	UPS power supply and network cable

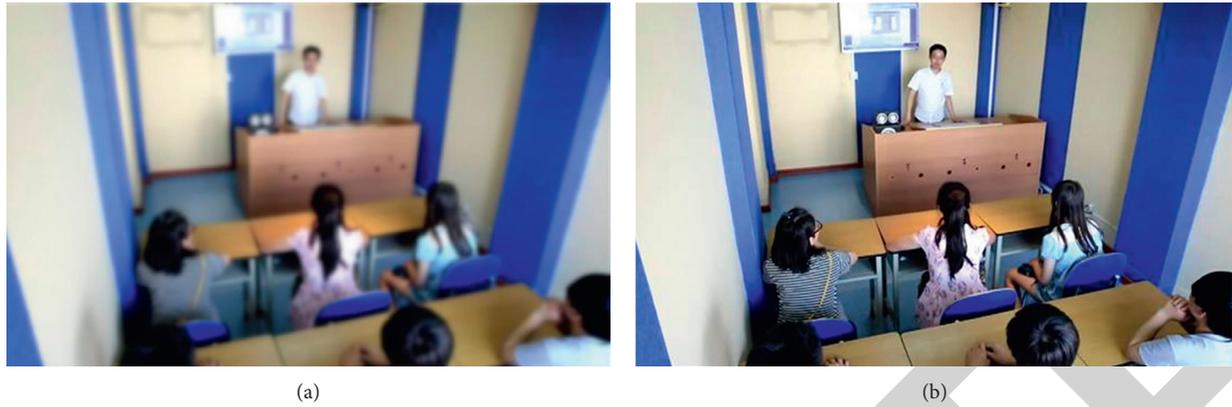


FIGURE 6: Effect picture of video processing results in classroom (a) Original image (b) Enhance the effect.



FIGURE 7: Effect picture of courseware video processing result (a) Original image (b) Enhance the effect.

TABLE 2: System performance test results.

Name	Performance description	Input	System response time/s	Output	Completion rate
Standardization of testing information	Check the correctness of input, modified and deleted data	Input all kinds of information	0.2	Whether the output information meets the specification	100%
Information input, modification and deletion of database	Input, modify and delete the corresponding data in the database	Input, modify and delete information	0.7	Output prompt information	100%
Video query	Find the manuscript that meets the condition in the database	Input information	7	Output qualified records	100%
Video release statistics	Query the number of videos that meet the date condition	Enter the time period to be counted in the date	2.5	Output the number of videos in this period	99.8%
VOD statistics	Query the number of VOD that meets the date condition	Enter the time period to be counted in the date	3	Output the number of videos in this period	98.40%

running speed, which takes 14.8 seconds, the system in reference [8] takes 12.2 seconds and the system in reference [23] takes 8.5 seconds, and the system in reference [24] takes 4.5 seconds. The system in this paper takes the shortest time which takes only 3.9 seconds, and the running speed is 3.8

times and 3.1 times of the two comparison systems respectively. It shows that the system in this paper has a strong advantage in the storage performance, and can effectively avoid the slow running problem caused by the excessive number of users.

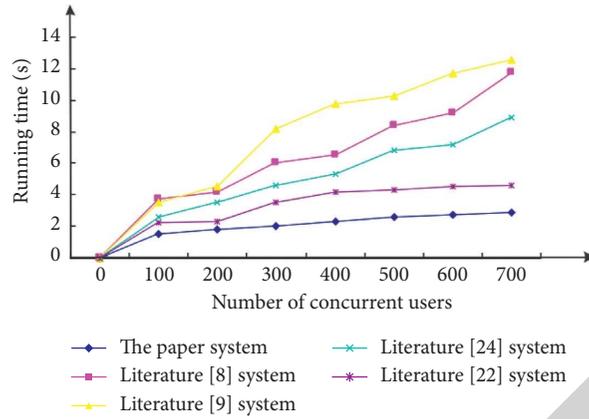


FIGURE 8: Comparison of system running speed.

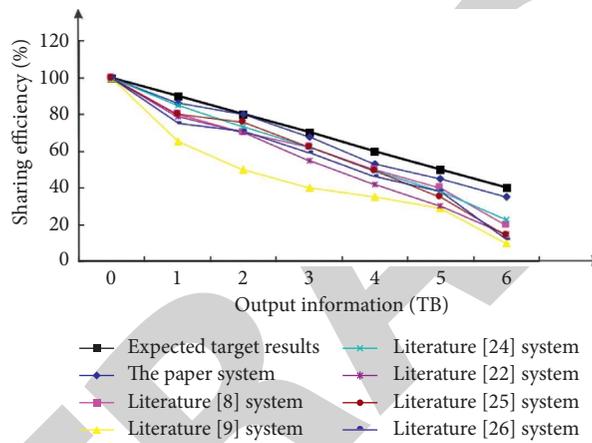


FIGURE 9: Comparison results of output information network sharing efficiency.

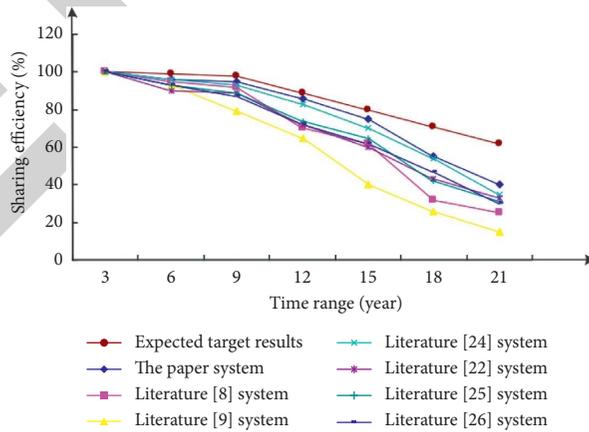


FIGURE 10: Comparison results of time range sharing efficiency.

3.4. Network Sharing Efficiency Test. In the process of knowledge sharing, a relative index is used to measure the closeness between the real sharing result and the maximum expected goal, that is, the ratio of the actual sharing result and the maximum expected goal. In the actual operation process, it is difficult to achieve 100% of the network sharing efficiency, and the maximum expected goal is the ultimate goal of all

network organization members for knowledge sharing. The efficiency of information sharing is measured from the two dimensions of the amount of information shared and the time range of sharing. If the result of network sharing is very close to the expected goal, the higher the efficiency of sharing is, otherwise, the lower the efficiency is. The comparison results of information amount network sharing efficiency are shown

in Figure 9, and the comparison results of time range sharing efficiency are shown in Figure 10.

It can be seen from Figure 9 that with the increase of output information, the expected target decreases in inverse proportion. In the actual test process, the overall trend of the three systems is consistent with the expected target results, and all maintain a downward trend. Compared with the two systems, the network sharing efficiency of the system in this paper is closer to the expected goal, and the average sharing efficiency is 64.4%, which is higher than 9.1% and 24.2% of the systems in reference [8] and reference [9] respectively. It can be seen from Figure 10 that the time range sharing efficiency of the three systems keeps the same as the expected results, showing a downward trend. Among them, the system in reference [9] has the lowest sharing efficiency and the system in this paper has the highest sharing efficiency. The sharing efficiency in the System in Reference [9] and the System in Reference [9] is relatively balanced. The video data sharing efficiency for 12 years ago is basically consistent with the expected results, and the average sharing efficiency for the past 21 years is 76.4%, which is higher than that of the system in reference [8] and the system in reference [8] with 12.1% and 22.1% respectively. From the two dimensions of the amount of shared information and the range of shared time, the experimental results show that the system based on microtechnology + NAS network has better sharing effect, can effectively improve the effect and efficiency of students' learning, and expand students' access to knowledge resources.

4. Conclusion

Using microtechnology to realize the management of teaching video resources in colleges and universities is the inevitable result of the development of information modernization. Whether the system platform is efficient and convenient directly affects the amount of calculation and accuracy in unit time. Web platform ASP.NET Architecture and microtechnology are used and combined with its own system operation mode, to establish a set of customized video management system, which can make all aspects of work achieve remote control, intelligent and efficient management. The system can make full use of video resources and other teaching resources, improve teaching efficiency, strengthen students' learning initiative, and enrich students' access to knowledge. But there is a critical issue with NAS: bandwidth consumption during the backup process. Unlike a storage area network (SAN), which moves the backup data stream away from a LAN, NAS still uses a network for backup and recovery. Another disadvantage of NAS is that it moves storage transactions from parallel SCSI connections to the network. This means that the LAN must handle storage disk requests, including backup operations, in addition to normal end-user traffic. However, in the structural system of the system, we can also make corresponding improvements to the humanized service of the system, and the visual system interface is also the focus that we need to consider. In the future work, we need to gradually improve this.

Data Availability

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

Conflicts of Interest

Declares that he has no conflicts of interest.

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