

Retraction

Retracted: Application of Digital Image Processing Technology in the Remote Interactive Art Teaching System

Security and Communication Networks

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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. Meng, "Application of Digital Image Processing Technology in the Remote Interactive Art Teaching System," *Security and Communication Networks*, vol. 2022, Article ID 6419117, 12 pages, 2022.

Research Article

Application of Digital Image Processing Technology in the Remote Interactive Art Teaching System

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Modern distance teaching activities have occupied an important position in current education and teaching activities. This research mainly discusses the application of digital image processing technology in remote interactive art teaching systems. In order to avoid complicated calculation and a huge amount of calculation, reduce the difficulty of calculation, and improve the correction speed of distorted image and for qualitative recognition and correction of a large background and small target (or medium and small target) digital images (video is regarded as a special form of continuous image, method-like) that appear in a large number of remote teaching activities, this paper proposes a direct look-up method based on coordinate interpolation, that is, to establish the approximate correspondence between the image coordinate positions before and after the distortion and build a reference model for comparing the two image coordinates through experimental data. The system design includes overall design, functional module design, and database design. To realize the function of distance education, it must have characteristics different from ordinary networks and the most important thing is that its transmission bandwidth should be large. Because the distance education platform needs to be able to transmit the teaching text, hear the teacher's voice, see the teacher's teaching image content, and even see the carefully designed animation, the distance education system must have a very wide bandwidth. The database tables are designed using entity attribute diagrams and E-R diagrams. E-R diagram is also called entity-connection diagram, which provides a way to express entity types, attributes, and connections. It is used to describe the conceptual model of the real world. Remote online test management includes test content perform operations such as addition. The art teaching management system designed in the article will make teachers and students no longer be restricted by time and place and can inquire about students' information, choose courses freely, inquire about grades, and understand the teaching plan anytime and anywhere. This research helps to promote the development of remote interactive technology.

1. Introduction

Many traditional teaching methods include lecture, demonstration, listening, memorizing, practice, observation, etc. The prerequisite is to ensure that students actively perceive and understand the knowledge of the subject's purpose, do not perform abstract rote memorization, but can adapt to the situation when solving problems. So as to consolidate and improve the knowledge reserve to be able to cope with various examination questions and so on. As the country pays more and more attention to school education, campus network facilities are becoming more and more perfect. In order to learn and comprehend knowledge better, more conveniently, and more quickly, we should combine

advantages and transform the previous traditional teaching methods to the current intelligent teaching methods so that learning efficiency can be continuously improved. Most of the art education focuses on the art itself and focuses on the teaching of skills. All of these severely restrict the development of art education and teaching in high schools. Therefore, the reform of the new art curriculum that meets the requirements of quality education has improved the status and provided space for art education.

In such a big environment and when the school wants to continuously improve course teaching, the construction course website fully demonstrates its necessity. It is a form of education that transmits courses to one or more students outside the campus. It is an education form in which

students and teachers, students and educational organizations, teachers and educational organizations mainly adopt a variety of media methods for systematic teaching, educational management, and communication. To establish such a course website, the capital investment is not large, required not too much, and the operation and maintenance of the website are relatively convenient, so the construction of the website is feasible. The intelligent interactive education system has made some achievements in recent years, but the current interactive education system cannot meet this requirement. Therefore, in general, although the interactive education system has made great progress, there are still big problems which affect the modernization process of education and teaching in our country to a certain extent. The development of modern education has important practical significance.

Remote interactive teaching can optimize the classroom structure, improve teaching efficiency, and stimulate students' creative thinking. It has many advantages and functions that other media (such as slides, projection, etc.) do not have or are not fully equipped. It has become a development trend of modern teaching and has a profound influence and great significance on educational concepts, teaching methods, and teaching organization forms. This paper discusses the construction process of an auxiliary. Teaching provides students with learning anytime, anywhere, so that life-long learning becomes possible. Students learn in a brand-new way, which can achieve certain educational goals well in teaching. Therefore, modern teachers should give full play to the educational functions and resource advantages of the network and strengthen interactive teaching activities.

The main research structure proposed in this paper is as follows:

Section 1 briefly introduces the research background, research status at home and abroad, research significance, and research content.

Section 2 evaluates previous related work.

Section 3 is an overview of related technologies. This section provides a detailed overview of the techniques and techniques to be used in this study.

Section 4 is the demand analysis and design of the art teaching and research system. According to the characteristics of art education and teaching, this section analyzes the current requirements of art education and teaching for the system and realizes the analysis of the art education and teaching system through functional demand analysis and module analysis.

Section 5 is the realization of the art teaching and research system. Through the analysis of the presentation layer, control layer, logic layer, and persistence layer, the process and steps of the art teaching and research system are described and designed in detail. And it analyzes the important strategies and algorithms adopted in the current online art teaching system and finally explains how the paging technology is realized.

Section 6 summarizes the research content and results of this paper and proposes future research directions by analyzing the shortcomings of this research.

2. Related Work

Although traditional online teaching can also allow students to watch the teacher's lecture, this information receiving mode is nonreal-time and one-way for students. Students will feel bored and passive, resulting in low classroom efficiency. To fully achieve the goal of curriculum website construction, it needs long-term hard work. In teaching, we must continuously integrate teaching practice, focus on improving the quality of teaching, and constantly adopt new measures website and improvement of teaching quality. Kołodziejczak and Roszak believe he introduced the knowledge level [1]. Shields believes that more and more students around the world are participating in distance education courses. Representative participation and pedagogical elements meet the requirements of institutions and industries. For this reason, it is essential to design contemporary courses to ensure these results are achieved. He uses narrative and comprehensive methods to promote understanding. He regards the role of educators as conductors, technicians, and choreographers. Finally, he proposed a triad consisting of pedagogy, technology, and participatory learner community as the basis for ensuring that the curriculum conforms to contemporary practice [2]. Harsasi and Sutawijaya believe that the online learning system has become the main requirement for the implementation of the learning process, which is mainly reflected in Indonesia [3]. Vasilevska et al. believe that the distance learning environment with different methods has become one of the most studied paradigms [4]. Abdullah NA believes that in addition to the traditional model, Pakistan's teacher education programs are also provided through online and distance education. He chose the students who participated in the teaching practice module in the fall semester of 2018 as a sample. Data sources include teaching plans, lectures, administration, and extracurricular work made, teachers' teaching has improved. The teacher's personal visit is very important for verifying and evaluating actual classroom teaching [5]. For a distance teaching system, the difference of the examination subsystem determines the success of the teaching system to a large extent, while for the examination subsystem, the degree of differentiation of the test paper directly determines the pros and cons of the examination subsystem.

3. Interactive Remote Teaching System Design

3.1. Remote Interactive Art Teaching System. After a class is finished, a teaching video is formed and uploaded to the traditional network platform of the distance education organization so that those students who can not participate in the classroom in real time due to various special reasons can watch it. The form of interaction can be text, voice, or even video. Because this kind of teaching video does not only carry out one-way knowledge infusion like traditional

teaching media but two-way information interaction, the learning effect of students can be much better. The network teaching system oriented to the fine arts profession studied in this paper is mainly aimed at the teacher-side teaching function that can realize the virtualized classroom environment. Secondly, it is planned to restore the classroom environment for the coursework system, and the system saves and prints the lecture information to provide teachers with an independent examination platform. The system structure diagram is shown in Figure 1. The website design should not only focus on the needs of the initial users of the system but should conduct a more extensive analysis to determine more comprehensive needs. Servlet (Server-Applet) is the abbreviation of JavaServlet, which is called a small service program or service connector. It is a server-side program written in Java and has the characteristics of being independent of platform and protocol. Its main function is to browse and generate data interactively and generate dynamic Web content. From the perspective of system architecture, Servlet greatly reduces the complexity of application construction. From the perspective of website planning, the website will not become simple because of Servlet. But what Servlet brings is better reuse and maintenance, which makes development more flexible so that more work can be put on-demand analysis and implementation and system debugging. The system is mainly divided into six subjects and three connections. The six subjects are students, teachers, administrators, homework, latest information, and friendship links. The relationship between students, teachers, and administrators is management, and the relationship between students, teachers, administrators, and homework is also management. The relationship between students and the latest information and friendship links is browsing, and the relationship between teachers and administrators and the latest information and friendship links is management [6, 7].

The input and output devices are mainly for drawing boards and input pens, and their main functions are similar to the basic tools of using Windows drawing boards. But it is mainly an external input device, and the input process mainly uses different pressure sensing to obtain the length and width of the unit, with a corresponding pressure pen as an aid. It can simulate the feeling of painting in daily life in real time. Mainly, the sensitivity to pressure is relatively high, and the result can be correctly perceived. Once the degree of perception is high, it can simulate the characteristics of the input picture to the maximum. Its pressure-sensitive base has reached the 2048 level, and it is a very sensitive pressure-sensitive device [8].

The IP address refers to the Internet Protocol address. The IP address is a unified address format provided by the IP protocol. It assigns a logical address to each network and each host on the Internet to shield the differences in physical addresses.

The network teaching system is based on the standardized management of one-to-many teaching mode. The students connect with the teacher's teaching system through the network interface and the corresponding network IP, which effectively reduces the repeated teaching of a certain

aspect of the knowledge generated by the teacher's teaching. In addition, this teaching system has the function of preserving teaching content. We can understand and absorb the knowledge taught by the teacher in the spare time if we do not get a full understanding in the classroom. This not only reduces the repetition of the teacher's lectures but also ensures the repetitive learning of the information [9]. Figure 2 shows the data interaction between the WEB server and the back-end database.

3.2. Digital Image Processing Technology. The processing of distorted images belongs to the category of digital image processing. Distorted images in remote teaching activities are mostly caused by low-priced and low-quality digital image acquisition equipment used by educational institutions or students due to economic conditions, such as low-pixel cameras and scanners. Especially low-cost cameras mostly use lenses with optical distortions, and they cannot get satisfactory images when collecting static images, let alone collecting dynamic images. In order to improve the accuracy of quantitative analysis such as pattern matching and image detection and to minimize the influence of image distortion on teaching interaction, it is necessary to correct this type of distortion.

The remote interactive image processing system will undergo some changes when processing information. For a one-dimensional signal $f(t)$ that changes with time, if its maximum frequency range is fM , and the sampling period is T , the ideal sampling process is described as follows:

$$f_n(t) = f(t) \cdot \sum_k \delta(t - kT). \quad (1)$$

Here, $f_n(t)$ represents the signal discrete in time after sampling.

The corresponding Fourier transform is as follows [10]:

$$F_n(f) = F(f) * \left[\frac{1}{T} \sum_k \delta\left(f - \frac{k}{T}\right) \right] = \frac{1}{T} \sum_k F\left(f - \frac{k}{T}\right). \quad (2)$$

Compared with one-dimensional sampling, the process of converting the scene captured by the camera into discrete electrical signals is actually a two-dimensional sampling process [11]:

$$s(x, y) = \sum_m \sum_n \delta(x - m\Delta x, y - n\Delta y), \quad (3)$$

$$s(x, y) = \sum_m \sum_n \delta\left(x - m\Delta x - \frac{1}{2}m\Delta x, y - n\Delta y\right).$$

Sampling $f(x, y)$ to get the sampled image $f_s(x, y)$ is as follows:

$$f_s(x, y) = f(x, y) \cdot \sum_m \sum_n \delta(x - m\Delta x, y - n\Delta y). \quad (4)$$

Suppose the two-dimensional sampling function $u(x, y)$ and its Fourier transform $S(u, v)$ are as follows:

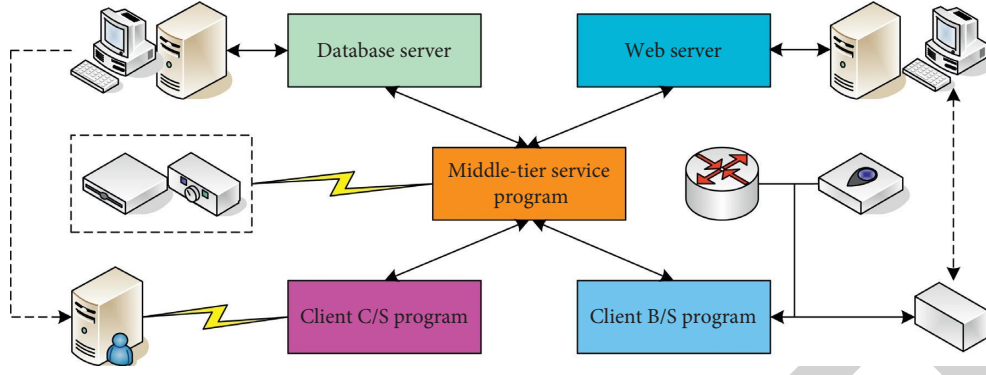


FIGURE 1: System structure diagram.

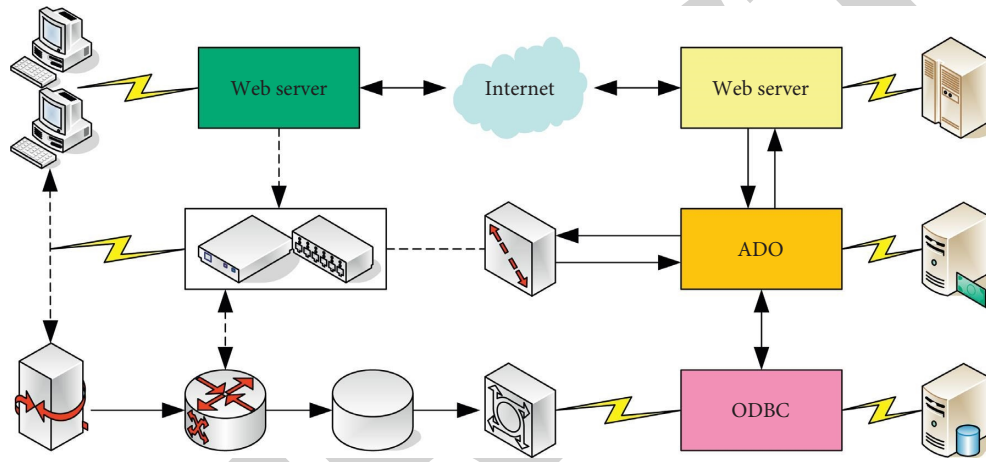


FIGURE 2: Data interaction between the WEB server and back-end database.

$$u(x, y) = \sum_m \sum_n \eta(x + m + \Delta x, y + n + \Delta y), \quad (5)$$

$$S(u, v) = \frac{1}{\Delta x} \frac{1}{\Delta y} \sum_m \sum_n \delta\left(u - m \frac{1}{\Delta x}, y - n \frac{1}{\Delta y}\right).$$

Assuming that the two-dimensional sampling pulse is $M \times N$ dimension, it is expressed as follows:

$$s_p(x, y) = \sum_{m=1}^M \sum_{n=1}^N p(x - m\Delta x, y - n\Delta y). \quad (6)$$

Here, $s(x, y)$ is two-dimensional Dirac sampling function [12].

The sampled image can be expressed as follows:

$$\begin{aligned} F_p(x, y) &= f(x, y) \cdot s_p(x, y) \\ &= \sum_{m=0}^M \sum_{n=0}^N f(x, y) p(x - m\Delta x, y - n\Delta y). \end{aligned} \quad (7)$$

According to the convolution theorem,

$$F_p(u, v) = \frac{1}{4\pi^2} F(u, v) * [S(u, v) \cdot P(u, v)]. \quad (8)$$

Interpolation error is as follows [13]:

$$Rn(x) = \frac{f^{(n+1)}(\xi)}{(n+1)!} \prod_{i=0}^n (x - x_i) (\min(x_i) \leq \xi \leq \max(x_i)). \quad (9)$$

The discrete is defined as follows (the original image size is $M \times N$).

Positive transformation is as follows:

$$f(u, v) = \sum_{u=0}^M \sum_{v=0}^{n-1} f(v, v) e^{-2j\lambda(nx/m+vy/n)}. \quad (10)$$

The inverse transformation is as follows:

$$f(x, y) = \sum_{u=0}^M \sum_{v=0}^{n-1} f(x, y) e^{-j\lambda(nx/m+vy/n)}. \quad (11)$$

Assuming that the original image is F and the template is G , then

$$NC(x, y) = \frac{\sum(|F(x, y) - E(F)| \times |G(x, y) - E(G)|)}{\sqrt{\sum(F(x, y) - E(F))^2 \sum(G(x, y) - E(G))^2}} \quad (12)$$

Take $n+1$ reference image points $f_k(x, y)$ on a curve in any image, then the curve uses a binary n -th Lagrange

interpolation polynomial, which can be expressed as follows [14]:

$$L(x, y) = \kappa \sum_{k=0}^n f_k(x, y) l_k(x, y). \quad (13)$$

Here, $l_k(x, y)$ is a binary n -th order interpolation shape function.

The gradient weight coefficient is defined as follows:

$$\begin{aligned} H_L &= \frac{1}{\sqrt{1 + \alpha \left(|f_{i+1,j} - f_{i-1,j+1}| + |f_{i+1,j+2} - f_{i+1,j-2}| \right)}} \\ H_r &= \frac{1}{\sqrt{1 + \alpha \left(|f_{i,j} - f_{i+2,j+1}| + |f_{i+2,j+2} - f_{i+1,j-1}| \right)}} \\ V_u &= \frac{1}{\sqrt{1 + \alpha \left(|f_{i,j} - f_{i,j-1}| + |f_{i+1,j+1} - f_{i+1,j-1}| \right)}} \\ V_l &= \frac{1}{\sqrt{1 + \alpha \left(|f_{i,j+1} - f_{i+1,j}| + |f_{i+1,j+1} - f_{i+1,j+2}| \right)}} \end{aligned} \quad (14)$$

Among them, α is the sharpness parameter, which controls the sharpness of the image, and the value range is between $[0, 1]$. When α is 0, the gradient weight becomes 1. As α increases, the gradient weight coefficient decreases to below 1, resulting in a sharper image [15].

The bicubic interpolation function is as follows:

$$G(x, y) = \sum_{n=1}^2 \sum_{m=-1}^2 f_{i+m} p(s) p(t). \quad (15)$$

In the formula, $P_{m+1}(s), P_{n+1}(t)$ is the interpolation sum.

3.3. Design of Art Material Management Function

3.3.1. User Group Management Function. This system has a user group management function. A user group can have multiple users, and at the same time, a user can belong to multiple different user groups. The difference between users lies in the group of permissions. There are six levels in total. Among them, levels 1–5 are the authority within the user group, level 1 is the lowest user level, and level 6 is the user group leader. Users with level 6 can manage all user information in this group.

3.3.2. Material Management Function. This function realizes the operations on the material data table: the user can add and delete the information content of the material and can also select the classification of the material for modification. When modifying the group name and category of the material, the level must also be determined. There are 5 levels of material, divided into 1–5 levels. When the user group name is the same as the material group name, the system judges whether the material can be accessed current

and level. If the user current material, the user can access it; otherwise it cannot be accessed.

3.3.3. Download Management Function. Because of the “buffer library architecture” when downloading, the file is stored in the buffer, and the downloaded material information is stored in the buffer table. After the user operation is completed, the system administrator will migrate the data into the formal table [16].

The E-R model diagram of the database conceptual structure independent of the actual data model structure must be transformed into the logical structure E-R diagram for database application design. System’s appreciation resource information design is shown in Table 1.

3.4. Test Environment. Operating system: Microsoft Windows 7

Database: SQL Server 2008

Test related software: MyEclipse 10, Microsoft Office 2010, tomcat 7.0

3.5. System Test and Operation. Unit testing is mainly to test various controls, components, public functions, and reusable modules. Interface testing is mainly to understand whether the designed software interface can correctly guide the user to actively complete the operation. It needs to have a guiding role: to allow the user to work in a comfortable environment [17]. Integration testing is mainly used for the cooperation between systems and components. The security and its data cannot be stolen, whether the privacy can be protected, and whether the data can be encrypted correctly [18]. The server creation link is mainly based on the IP creation of the corresponding server, and the corresponding students are notified to go to the class, and the students add the link by themselves through the user information prompted by the teacher [19, 20]. In addition, the administrator user is responsible for teachers and students to conduct proper management for the entire user. First of all, the corresponding search can be made for the teacher users and student users of the art professional network teaching system. Secondly, the corresponding teachers and students can be appropriately added according to the needs. Once there are errors, the teachers and students can be modified and deleted appropriately according to the corresponding information.

4. Results of the Remote Interactive Art Teaching System

In the survey, it is found that the design basis of art teachers is the theoretical basis of teaching, the needs of teaching practice, the characteristics of students in each grade, and the content of teaching materials. Among them, “teaching practice needs” accounted for the highest proportion (96.2%), followed by “the characteristics of students in each grade” which accounted for 92.5% of the total number of surveys. The proportions of “based on the content of

TABLE 1: System appreciation resource information design.

Field name	Data type and length	Chinese meaning
ID	Int (8)	Self-incrementing ID
Type	Int (8)	Type
Title	Varchar (50)	Title
Content	Varchar (500)	Content
URL	Varchar (50)	Link

teaching materials” and “needs for teaching practice” are 58.5% and 39.6%, respectively. The survey results show that art teachers put a large proportion of the actual needs of teaching and the characteristics of students when designing their courses, so they ignore the support of teaching theories and teaching materials to varying degrees. The focus of art teachers’ teaching is shown in Table 2.

In the survey, we can clearly and intuitively see that the number of art classes students take each week is mainly concentrated in “1–2 periods” and “3–4 periods.” They each account for 35% and 58% of the total, which is more than 90% of the total (students’ weekly art class 1–4 section statistics are shown in Figure 3(a)). This reflects the good start of art classes. However, the proportion of “5–7 periods” is also relatively large, indicating that some schools may have occupation and suspension of classes (students’ weekly art class statistics of 5–7 sessions are shown in Figure 3(b)).

Students’ favorite art classes are sketching, paper-cutting, clay sculpture, paper prints, pottery, watercolor, Chinese painting, and calligraphy. The most disliked are appreciation classes and photography. The love range of students’ art projects is shown in Figure 4.

In a comparative study of male and female classifications, boys’ favorite items are sketching (86.63%), copying (97.57%), painting (97.87%), clay sculpture (93.31%), pottery (84.80%), and watercolor (86.63%). Boys’ least favorite item is knitting (32.83%) (boys’ hobby items are shown in Figure 5(a)). Girls’ favorite items are clay sculpture (88.43%), paper-cutting (86.35%), pottery (89.32%); girls’ least favorite items are sketching (10.39%), copying (15.73%), appreciation class (8.01%). Girls’ love for knitting and paper-cutting is significantly higher than that of boys by about 30%, while boys’ love for sketching, copying, painting, and calligraphy is significantly higher than that of girls by more than 20% (girls’ hobby items are shown in Figure 5(b)). It can be seen from the survey results that girls are more inclined to the more gentle course content, while boys prefer the learning content of calligraphy and painting.

The system designed in the article includes a forum module, where both student users and teacher users are regarded as registered users. The test results of the forum management function are shown in Table 3.

According to the performance design of the system, the main function module needs to define the main data table, and several auxiliary data tables need to be designed. The student information design is shown in Table 4.

The oil painting masterpiece information is shown in Table 5.

Judging from the results of the survey, most of the students participating in the survey think that using the

TABLE 2: The focus of art teachers’ teaching.

Focus	Frequency	Percentage
Teaching theory basis	21	39.6
Teaching practice needs	51	96.2
Characteristics of students in each grade	49	92.5
Based on the content of the textbook	31	58.5

remote interactive art teaching system is helpful to complete the art class (the statistics of great help and a little help are shown in Figure 6(a)). This also fully shows that this form has a positive impact on the learning status of students (the statistics of no help and negative help are shown in Figure 6(b)).

35% of students think it is “increasing opportunities to exchange works and ideas with teachers and classmates” (statistics for supplementing and expanding the knowledge of art disciplines and increasing opportunities for the exchange of works and ideas are shown in Figure 7(a)). There are also 22% of students think it is understanding the teacher’s lesson plans (to understand the basic learning situation of the teacher’s teaching plans, homework completion specifications, and to improve the enthusiasm of active learning and completion of homework, the statistics are shown in Figure 7(b)).

In the survey on the teaching function of the website, 74% of the students liked the setting of the learning resource area most, and 52% liked the “work display and evaluation function” (the statistics of learning resources and work display are shown in Figure 8(a)). Another 30% of students like the design of interactive functions, but students are generally not interested in the function of “filling in learning files” (the statistics of interactive functions and filling in learning files are shown in Figure 8(b)).

In the survey on the difficulty of using the remote interactive art teaching system to learn art, 39% of the students think it is more difficult to complete the homework, 13% of students think it is the most difficult to find learning materials to complete the homework, and 22% of students think it is more difficult to be familiar with the website interface and functions. The survey results of the difficulty of learning art are shown in Figure 9.

83% of students think that the remote interactive art teaching system makes them more like art classes, 78% of students are willing to use the remote interactive art teaching system to assist in learning in art classes in the future. Another 22% of the classmates were indifferent to which way to take an art class. The willingness of students for the remote interactive art teaching platform is shown in Figure 10.

5. Discussion

The Internet allows us to better understand society, show our individuality, participate in society extensively, and meet people’s entertainment needs. Network communication expands the field and objects of our communication, changes the way of communication in the past, and enriches our life experience. In the new space of online communication, we can break through the professional restrictions.

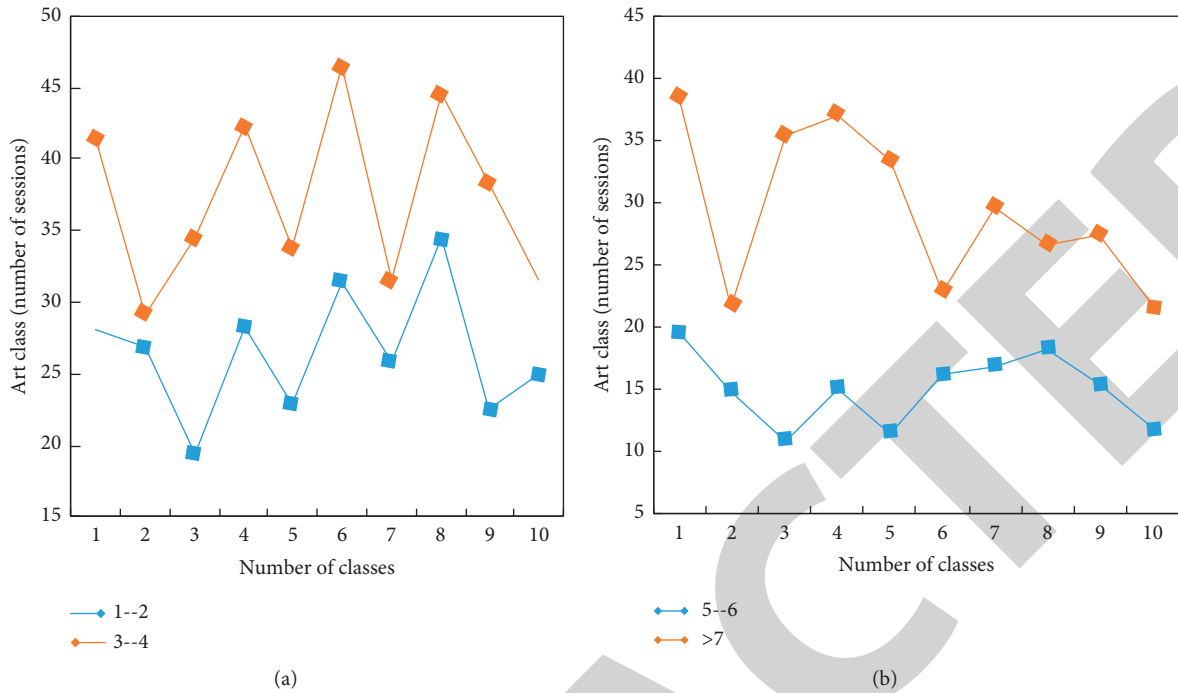


FIGURE 3: The number of student art classes per week. (a) Sections 1–4. (b) Sections 5–7.

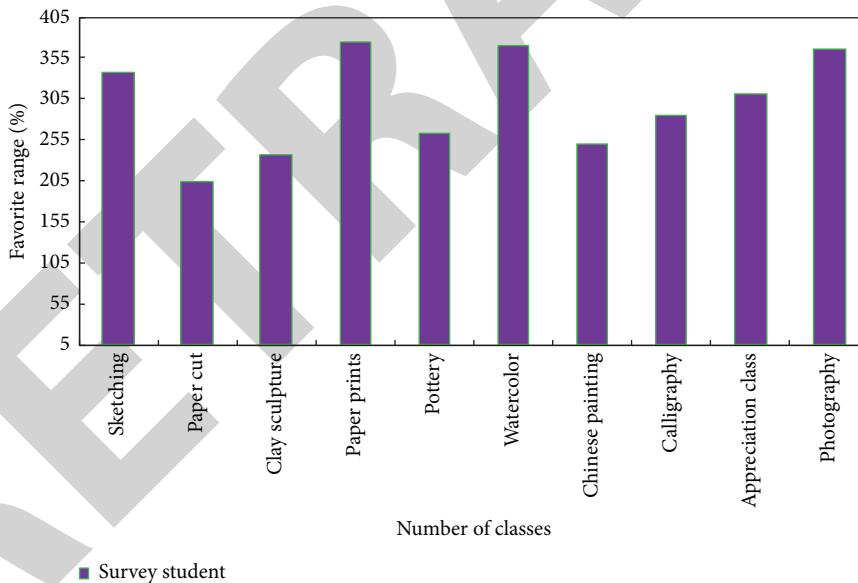


FIGURE 4: The range of students' passion for art projects.

As long as we want to learn, we can find learning resources and instructors at any time. The network is very useful, but of course, it is not just the above.

Under the background of the network information age, Internet technology has been fully penetrated into all walks of life, and most of the schools have introduced electronic computer technology and network information technology, relying on these two technologies to carry out curriculum teaching activities. In this way, it enriches the content of students' curriculum and greatly improves efficiency and quality, which shows that it can promote

students' autonomous learning. With the improvement and prosperity of China's system reform, some teaching methods and teaching models that were not good in the past can no longer meet the current teaching needs. Therefore, many teaching methods must appear as an education model. This is a challenge that every developing country and developed country's education system must face, and it is also the historical law of the development of education systems in countries all over the world. Only by improving the country's own educational system can we have a better curriculum teaching concept. This is an

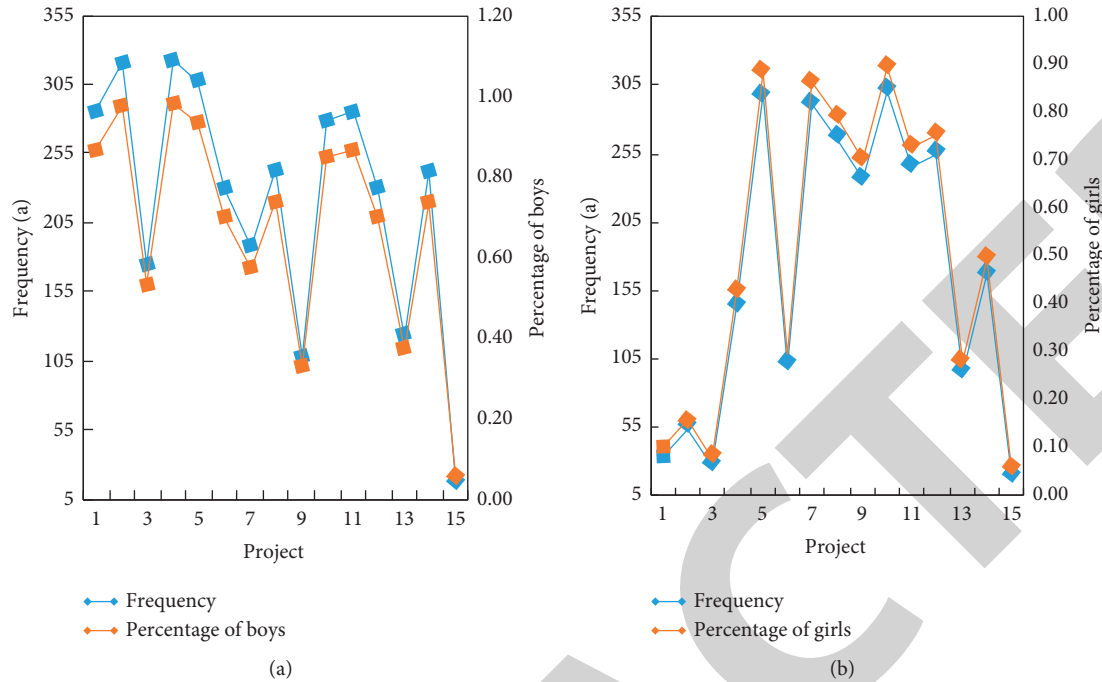


FIGURE 5: Comparison of hobby items. (a) Boys' hobby items. (b) Girls' hobby items.

TABLE 3: Test results of forum management function.

Module name	Module function	Percentage
Plate module	Browse section	92.6
	Browse the topic list	95.2
Theme module	Query subject	93.5
	Publish topic	98.5
	Edit theme	97.7
	View topic	96.6
Postmodule	Reply to post	94.8

TABLE 4: Student information design.

Serial number	Field name	Field type and size
1	Student ID	Number (20)
2	Name	Varchar2 (10)
3	Sex	Varchar2 (4)
4	College	Varchar2 (20)
5	Major	Varchar2 (20)
6	Class	Varchar2 (20)
7	Course	Varchar2 (100)

TABLE 5: Oil painting masterpiece information.

Serial number	Field name	Field type and size
1	Painting ID	Number (20)
2	Topic	Varchar2 (40)
3	Auther	Varchar2 (40)
4	Country	Varchar2 (20)

important issue that we, as today's curriculum educators, must be aware of.

This article is aimed at the network education of art colleges and universities. Compared with students of other

majors, they are very special in their professionalism, teaching focus, and training of professional knowledge. The previous student tutoring methods basically adopted a one-to-one method, which not only limited the utilization of teachers' time, but also students had hired teachers to tutor themselves. Therefore, we plan to use a more intelligent way to replace the existing teaching methods. Under this condition, the teacher can arrange self-built teaching tasks according to the common learning time of everyone and timely count the students' understanding of a certain module to increase the corresponding teaching ratio to the module. In addition, we divide the courses into key points and difficult points according to the level of understanding of most students in class. This not only can bring students the maximum learning efficiency but also allows students to obtain the maximum knowledge reserve effect in the limited learning time. Therefore, we develop an intelligent network teaching system suitable for learning in art colleges.

This article is mainly based on providing a more efficient and convenient teaching system for teaching. After in-depth research and investigation and analysis of art teaching, it mainly facilitates the teacher's teaching, and secondly, saves the content taught by the teacher, so as to help the students review and find the source of the problems for the students who do not understand. In addition, the system has a focus on the teacher's lectures, assigns priorities according to the students' listening situation, briefly describes most of the problems that can be understood, and focuses on the difficult points that everyone thinks. The selection of images should be based on the characteristics and requirements of the teaching content, follow the principles of demand and applicability, and focus on being able to explain the key points and

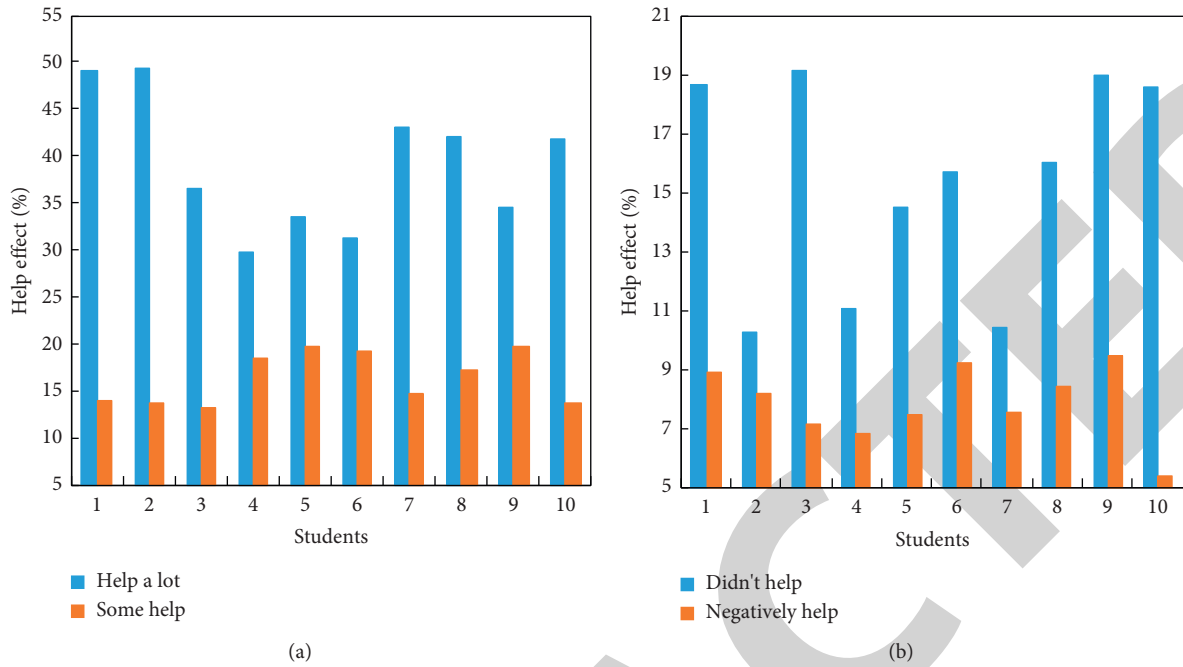


FIGURE 6: The situation of help to art class. (a) A lot of help and a little help. (b) No help and negative help.

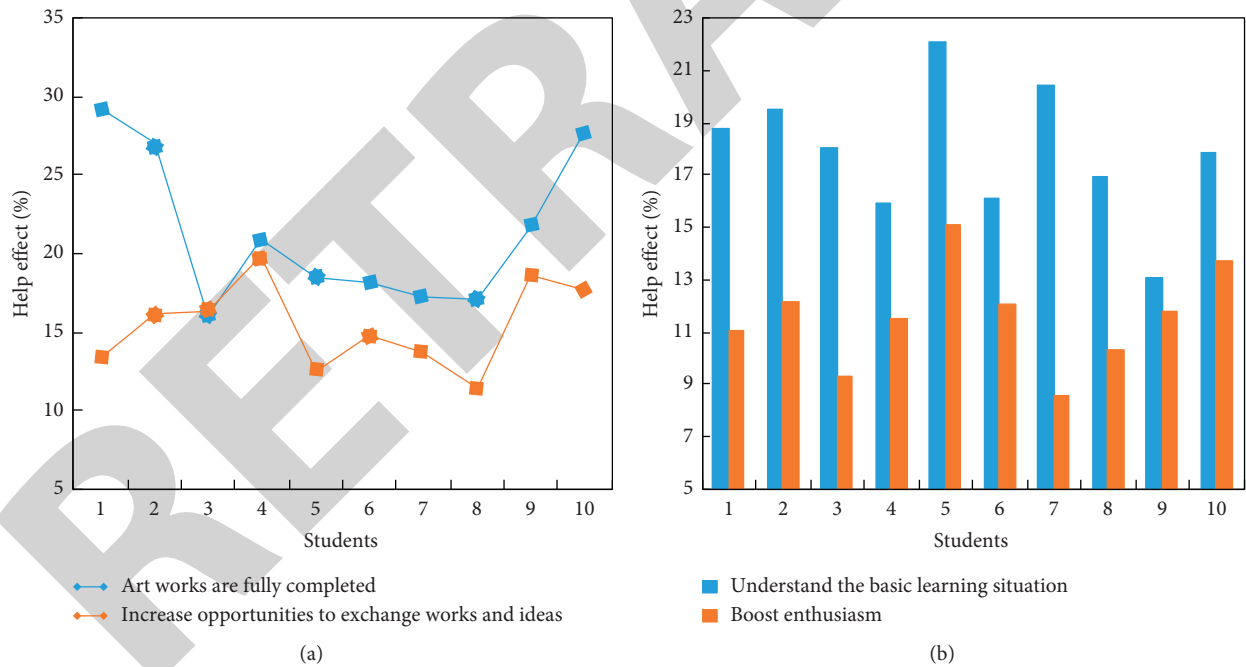


FIGURE 7: Specific help. (a) Supplement and expand the knowledge of art disciplines and increase opportunities for the exchange of works and ideas. (b) Understand the basic learning situation of the teacher’s teaching plans and homework completion specifications, and improve the enthusiasm for active learning and completion of homework.

difficulties of teaching or to create a situation and stimulate interest in learning. The layout of images should pay attention to grasping the “degree,” based on the principle of simplification, and use less or no images that are not related to the teaching content so as to avoid being self-defeating and causing the overflow of invalid information.

More complex images should be cut off from irrelevant parts to highlight details related to the subject.

Online network teaching can not only bring students the maximum learning efficiency, but also use a more humane teaching method to learn, pay attention to every student’s participation, mobilize the enthusiasm of students in

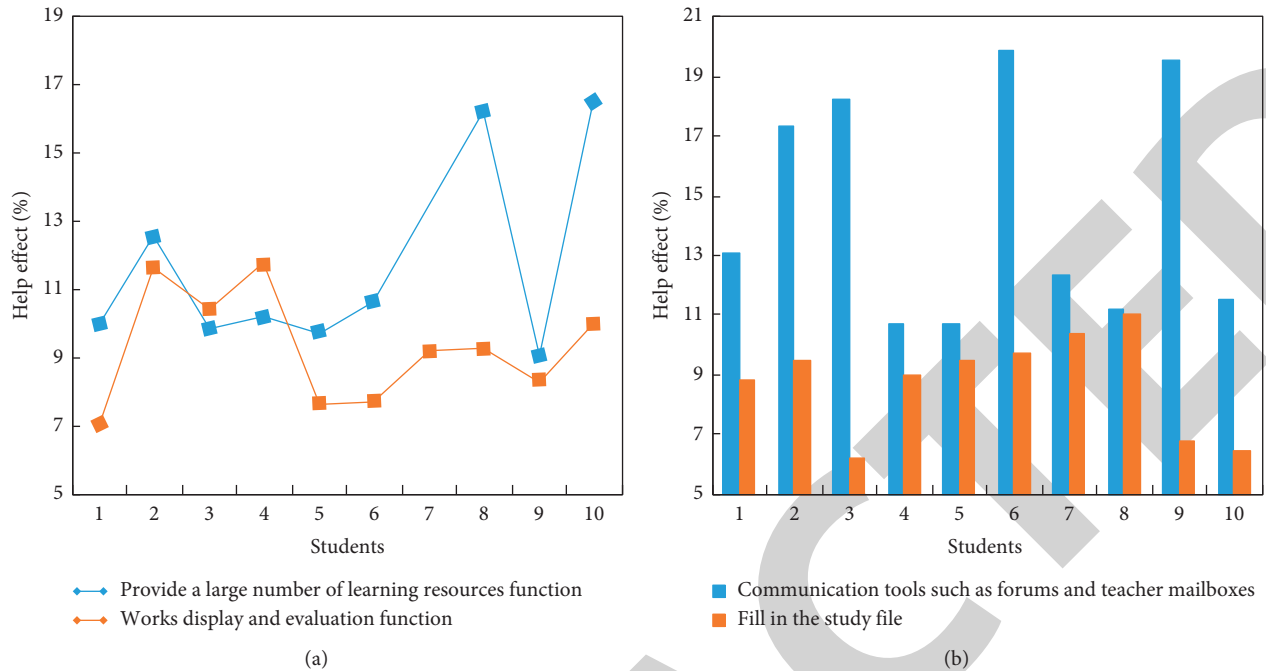


FIGURE 8: Website teaching function. (a) Statistics of learning resources and work display. (b) Interactive functions and filling in learning files.

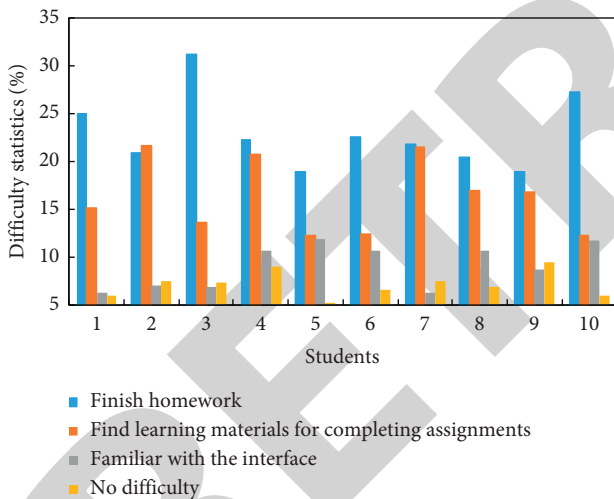


FIGURE 9: Survey results of the difficulty of learning art.

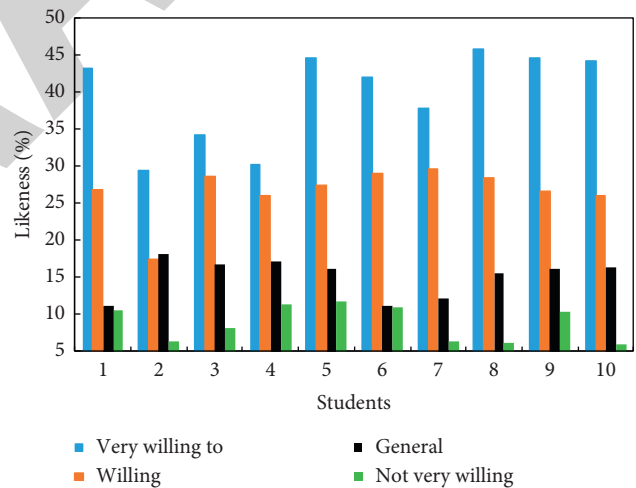


FIGURE 10: Students' willingness to remote interactive art teaching platform.

learning, and then give play to the teacher's initiative in teaching. Combining the two organically allows students to learn easily, and teachers can better grasp the key points in lectures. Therefore, the teaching methods are flexible and diverse, and a considerable effort has been made to realize the educational purpose of convenient, efficient, and happy learning. Through the network teaching system, the art is intelligent and humanized. The network teaching system uses not only advanced theoretical knowledge to transfer the traditional art teaching to the network but also uses modern technology to carry out epoch-making reforms to the traditional teaching methods. We must not only carry out the reform of art

teaching but also realize the art education method based on student learning.

In the modern and contemporary world, whether in China or in other western developed countries, there are not much research on the teaching management system of art courses. So this shows that in order to increase the frequency, it is necessary to pay and study meticulously by professional teachers responsible for art course teaching management and educators from all walks of life. This may be a long, complicated, and arduous process. This process is not only an opportunity for us but also a challenge. Because any teaching method law that adapts to the educational system must withstand the practical test in the process of

social development. Only by withstanding the test can we adapt to the educational trend of contributing research current social art curriculum teaching management system.

Modern distance education can serve the development of remote areas, especially the western region, and establish a policy of poverty alleviation through distance education. The Ministry of Education supports a distance education system in the western region. Modern distance education has a good foundation and conditions in this regard. Modern distance education conforms to the trend of world globalization and promotes education to the advent of the world information age. School education cannot be done behind closed doors. Modern distance education is a good way to conduct teaching and academic exchanges with foreign countries. This article is aimed at schools and researches in distance teaching, supplementing the various teaching networks currently available in schools so as to achieve the purpose of interconnection with distance teaching and distance teaching management. However, this topic is based on the actual project of a specific school as the research content. However, in order to not lose generality, various distance teaching networks currently existing in the school are discussed, and a universally applicable interconnection model and teaching management system are provided to improve the practicability and applicability of this system.

The information age calls for distance education. After years of development, schools have established various forms of auxiliary teaching facilities and methods. For example, multimedia computer network classrooms, multimedia TV teaching one-way or two-way teaching systems, campus multimedia integrated network teaching systems, stand-alone systems, campus computer network systems, and so on. All kinds of teaching systems are only used inside the school, lack of communication with the outside world, this situation of isolation from the outside world does not include information age. Education reform requires distance education, and many disadvantages of traditional education are obvious to all. In the current situation of advocating quality education, the implementation of modern distance education methods can not only overcome some of the shortcomings of traditional education but also has much practical significance.

The art discipline aesthetic education of students, cultivation of professional skills. Therefore, the demonstration of teachers between classes is indispensable. However, due to the limitation of the environment or time, the teaching of many art classes is not effective in the classroom. It is difficult to tell the whole painting process only by the teacher's dictation.

The use of technology to realize distance education has become the world's largest computer network, and tens of millions of users are enjoying the information services and resource sharing provided by the network. The agreement that constitutes one of the three elements of the network plays an important role. To realize a complete teaching function, the simple operation and convenient use of the system should also be considered. Although the campus multimedia integrated teaching network system is quite different from the traditional TV teaching network in

structure, the operation, use, and management of the system are basically the same as before. Compared with the computer network, it can be said to be simple to operate, easy to manage and use, so it is convenient for ordinary schools to use.

6. Conclusion

There are two main applications of computer networks in distance education. One is to connect the teaching network with a wide area by using protocols, and the other is to use technology to build a campus network. The application of remote interactive teaching integrates various technical means. The ultimate goal so that students can learn effectively even if they are in a different place. Teacher's teaching always occupies the most important part. Long-distance interactive teaching should enable students who are both on-site and studying in different places to participate in the communication and information when teachers are teaching. This paper uses the computer software design language based on JAVAEE and Oracle database server to complete the design of the conceptual structure, the logical structure the design of the application software interface interaction based on the B/S architecture. Under the traditional education model, teachers spend a lot of time in the process of homework assignment and homework correction, the work content is cumbersome, and it is difficult to judge whether students' homework is plagiarized. Therefore, designing a set of fully functional interactive teaching systems has important practical significance for the development of modern education. The problem of each pixel in the standard image before distortion needs to be further discussed in future work.

Data Availability

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

Conflicts of Interest

The author declares no conflicts of interest.

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