Application of Computer Remote Video Technology in Network Assisted Art Innovation by Computer Artificial Intelligence

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Abstract. In response to the needs of the teaching of art majors in colleges and universities today, this paper constructs a "based on campus network art major's hybrid auxiliary teaching innovation platform system". The system uses a perfect campus network to establish a secure network-assisted teaching platform system that integrates B/S structure and advanced ASP.NET technology with multi-level users. The platform provides a complete network-assisted teaching environment and realizes the integration and sharing of teaching resources in the largest range. Practical application shows that the highly operable courses of art majors in colleges and universities can stimulate students' initiative and improve students' learning ability under the application of this mode.

Keywords: computer; artificial intelligence; art major; mixed teaching mode; teaching platform

1. Introduction

The traditional teaching mode of colleges and universities is offline teaching, which is mainly based on teachers' teaching knowledge, which fails to reflect "student development as the center", and students have insufficient study time and thinking time. In addition, in the information age, there are a variety of learning methods on the Internet, and students can receive theoretical knowledge in a variety of ways. The traditional curriculum teaching that merely imparts knowledge lacks challenges [1]. Over time, students will lose interest in classroom learning. Compared with pure offline teaching and online teaching, the online and offline hybrid teaching mode can organically integrate the advantages of offline teaching and online teaching, and it can also incorporate a variety of teaching methods such as flipped classrooms, and has advantages in creating a "golden lesson" obvious.

Based on the existing campus network, how to use the resources at hand to develop an auxiliary teaching platform suitable for art teachers and students of this school is the main body of this research. In fact, many achievements have been made in the theoretical research and practice of network teaching in various colleges and universities in China, but the actual operation of the auxiliary teaching system for art majors is far from enough [2]. On the one hand, it is due to the lack of hardware and software environment, on the other hand. Because it involves information technology and knowledge of multi-disciplinary teaching at the same time, the implementation of the network-assisted teaching system...
requires a lot of preparatory work for teachers. In order to effectively organize network-assisted teaching, a software platform for implementing network teaching has emerged, which is the main content of this article.

2. Core concepts

2.1. Teaching interaction
Interaction originally refers to the interaction and influence of all beings. It is a concept introduced from social psychology to the field of teaching. Teaching interaction, also called teaching interaction or classroom interaction, is an indispensable and important link in teaching activities. The quality of teaching interaction greatly affects the teaching effect. From the perspective of pedagogy, "interaction" refers to the exchange, communication, communication, contact, influence and mutual influence between teachers and students in the teaching process using the teaching content as the medium to complete the teaching task in the modern educational technology environment [3]. The relationship of function emphasizes that the exchange relationship between teachers and students is based on the teaching content.

Combining the above viewpoints, it is not difficult to see that teaching interaction not only emphasizes the interaction between teaching participants, teaching interaction behaviors, teaching resources, and environment, but also the importance of teaching goals and solving teaching problems cannot be ignored. Teaching objectives have a guiding role in teaching activities and teaching tasks, and teaching interaction needs to take appropriate interactive behaviors and content around the teaching objectives. The emphasized instructional design moves from purely preset to dynamic generation, and dynamic generation is the largest classroom interaction. Characteristics.

2.2. Blended teaching
Blended teaching. Professor He Kekang once pointed out that blended teaching should combine the advantages of traditional learning methods with the advantages of digital or networked learning. It should not only give play to the leading role of teachers in guiding, enlightening, and monitoring the teaching process, but also fully embody the students' role as the main body of the learning process [4]. Initiative, enthusiasm, and creativity. In blended teaching, it not only emphasizes the combination of the advantages of traditional learning methods and online learning methods, but also uses the advantages of both to provide rich and diverse resources for teaching activities, forming a teaching environment that is conducive to teaching activities, and reflects the teachers' The leading role emphasizes the subjective status of students.

2.3. Synchronous interactive platform
According to the practical principle of selecting teaching media, the selection of teaching media should comprehensively consider factors such as the convenience of the media, the cost, the methods of teaching and learning, the interactivity and user-friendliness, the novelty, etc., based on the teaching objectives, teaching content, and teaching objects. As a basis, consider comprehensively considering the characteristics of specific teaching media and actual teaching conditions, and make reasonable judgments and choices [5]. At present, mobile smart terminals represented by smartphones and tablet computers integrate multiple technologies such as multimedia, wireless networks, and mobile communications, and have transformed from traditional communication tools to diversified tools integrating communication, entertainment, learning, work, etc. To become a shared tool for students to learn and communicate. In addition, education APPs relying on smart phones and tablet computers, with their super-large display screens, powerful interactive features, good user experience, and convenient network communication, have quickly won the favor of most learners.
3. Design of Mixed Teaching Platform

3.1. Development technology of network-assisted teaching system

3.1.1. Dynamic WEB technology. Dynamic content is usually created using client-side Java Script in the user's browser. Dynamic content refers to content tailored for each visit of a single user, which allows two-way communication. By using the form in the Web page, the user can request customized content. The communication between the user and the server includes more than just forms and customized content—cookies can also be stored on the user's machine to identify the user during the next session or the next time the user visits the Web site. Compared to putting static HTML documents in a suitable directory and allowing users to read them, managing all dynamic content is very challenging. There is more than one way to provide dynamic content. Each technology has its own advantages and disadvantages, and they are all specially designed to provide dynamic content.

3.1.2. Data Access Technology of ADO.NET. ADO.NET is a brand-new data access technology. Compared with the previous data access technology, ADO.NET supports various types of data storage, optimizes a separate data provider, and is suitable for remote data. In .NET, the transmitted data is in the XML format of the Extensible Markup Language [6]. Therefore, any application that can read the AML format can process the data. ADO.NET provides access to structured data. It uses a consistent and standardized programming model to provide access to transmission data sources. ADO.NET has interoperability, maintainability, programmability, high performance, and with the advantages of scalability, this system will combine these advantages during development and use the Connection, Command, Data Reader, Data Adapter, Data Set, and other objects in it to process data, and complete all the functions of the system on the question bank database through the .NET framework.

3.1.3. SQL Server database technology. This system uses SQL Server 2000 database system to design the question bank. The reason is that although .NET supports Microsoft Access, FoxPr. Such databases are used as effective data sources, but such database engines are only suitable for the development of small application systems, and cannot well meet the needs of high-demand, high-quality Web applications. Considering the factors of performance and reliability, general applications use relational database management systems with a "client/server database engine", such as Microsoft Silverer, Oracle, etc. SQL Server 2000 can provide database services required by very large systems, and can effectively allocate available resources among multiple users. It not only provides a huge data container, but also a very powerful data processing tool. Therefore, it is an ideal choice for the database server of this examination system.

3.2. System feasibility and demand analysis

We adopt a multi-layer Web application construction mode. Because the BS mode (browser server mode) and the traditional C/S (client/server mode) have the characteristics of wide application range, heterogeneity and openness, and stable platform technology, it is especially suitable Network-assisted teaching needs, so the network-assisted teaching platform system adopts BS mode. The system uses a high-performance PC as the server. On the Windows 2000 Server Advanced Server operating system, Microsoft SQL Server 2000 Enterprise Edition is used as the database server, and Microsoft visual Studio. NET 2003 is used as the front-end development tool. Use ASE.NET among them to develop Web application programs. Unlike ASP, ASE.NET separates page display and code, uses any markup language to provide information to users using any browser, and uses code on the server to implement application logic.

3.3. System structure

The system adopts a multi-layer Web application construction mode, as shown in Figure 1 below. The system development and operating environment are shown in Table 1. Since the B/S model
(browser/server model) is more suitable than the traditional model (client/server model), it has the characteristics of wide application, heterogeneous and openness, stable platform, and technology, it is especially suitable for the construction of network-assisted teaching platform. The system uses a high-performance PC as the server. On the Windows 2000 Server/Advanced Server operating system, Microsoft SQL Server 2000 Enterprise Edition is used as the server, Microsoft Visual Studio .NET 2003 is used as the foreground development tool, and ASP. NET is used for V} eb Application development. ASP. NET and ADO. NET is powerful. Use ASP. NET to separate page display and code, use any markup language to provide information for users using any browser, and use code on the server to implement application logic. Use ADO.NET as the basis of data access.

![Diagram](image)

**Figure 1. System construction model diagram**

**Table 1. System development and operating environment**

| Architecture                  | B/S structure               |
|-------------------------------|-----------------------------|
| Development Platform          | .NET                        |
| Development language          | VB, ASPNET, SQL             |
| development tools             | Microsoft Visual Studio .NET 2003 final beta |
| Client operating environment  | Web browser (IE, Netscape, etc.) |
| Server operating environment  | Windows 2000 Server/Advanced Server |
| Web server software           | Internet Information Server 5.0 |
| Database systems              | SQL Server 2000 Enterprise Edition |

3.4. System function module design

3.4.1. Functional design of student subsystem. The user first enters the login page, then logs in as a student, and finally enters the front page. The front-page functions are divided into eight parts. The main functions are: course learning, you can learn online tutorial content provided by the teacher, video, or courseware on-demand; available for viewing, Complete and submit the exercises provided by the teacher: you can modify your personal information and view your own learning progress; upload your own or others' excellent works, discuss courses, and discuss related courses through the chat room, etc.

3.4.2. Functional design of teacher subsystem. Teacher user role function design: Teachers can complete course management, including tutorial publishing, teaching chapter management, teaching video management, etc.; they can complete homework management, exam management, course answering and issuing announcements, survey management, and other functions [7]. The system adopts modular design and modular development, and is divided into eight modules: login and registration module, teaching announcement module, online classroom module, question and answer module, daily homework module, online communication module, online survey module, teaching resource module,
etc. The modules are loosely coupled, which minimizes the impact of changes in any module in the system on other modules in the system. To understand, test and modify any module, there is no need to design other modules of the system. The communication between the modules is carried out through the database. Each module has different functions designed for the different roles of teachers and students. Figure 2 shows the system function modules.

![System function modules](image)

**Figure 2.** System function modules

### 3.5. System database design

The design of the database consists of two parts: one part is the logical design of the database, the content includes the conceptual model of the concept level, that is, the global logical structure of the database to be processed by the data information system, and also includes the external model for the user level; the other part is the database. The physical design of this is to design the storage structure of the database under the premise of the logical structure (that is, the internal mode corresponding to the physical level). The conceptual structure design stage generates a conceptual model independent of the specific DBMS by synthesizing, summarizing and abstracting user needs, which is generally represented by the E. R model. The characteristics of the conceptual model are: (1) Simple and clear expression of user business environment data requirements, relationships, and constraints between data. (2) It is easy to communicate and exchange between designers and users. (3) Easy to convert to various logical data models. The logical structure design is to convert the conceptual structure into the data model supported by the selected DBMS and optimize it. Currently, most of them are converted into relational data models. The database is ultimately stored on a physical device. In this system, the ASP Upload component is used to upload job files.
4. System application effect analysis

4.1. Mastery of knowledge and skills

After a semester of online and offline "golden course" teaching, the author consulted the teaching record files of art students in order to understand the teaching effect of this teaching practice. The 2017 art design students (using the online and offline hybrid "golden course" teaching model) were compared with the 2016 art design students (using the online and offline hybrid teaching model) and SPSS 24.0 was used for analysis.

4.1.1. Descriptive Statistics. The author uses SPSS 24.0 to make descriptive statistics on the final grades of 2016 and 2017 teaching technology students. The results are shown in Table 2.

Table 2. Descriptive statistics of 2016 and 2017 final grades

| Grade  | Number of people | Average value | Standard deviation | Standard error | Minimum | Max |
|--------|------------------|---------------|--------------------|----------------|---------|-----|
| Level 16 | twenty-four   | 86.04         | 5.536              | 1.130          | 68      | 93  |
| Level 17 | 29              | 86.04         | 3.724              | 0.691          | 78      | 93  |

It can be seen from the average that the final average grades of the 2016 and 2017 art and design students are the same. In other data, the lowest score of the 2017 class is higher than the lowest score of the 2016 class. The standard deviation is a measure of the degree of dispersion of a set of data averages [8]. The smaller the standard deviation, the smaller the degree of dispersion. It can be seen from 5.536>3.724 that the degree of dispersion of students in grade 16 is greater, and the distribution of students in grade 17 is more concentrated. In order to further test the significance between the 2016 and 2017 final grades, the author uses an independent sample T test to determine whether there is a difference in student performance.

4.1.2. Independent sample T test. In order to have a clearer understanding of whether there is significance between the final average scores of the 2016 and 2017 art and design students, the author uses SPSS 24.0 to perform an independent sample T-test on the results of these five years. The results are shown in Table 3.

Table 3. Independent sample T test results of 16 and 17 grades

| Grades             | Assumed equal variance | Assumed unequal variance |
|--------------------|------------------------|-------------------------|
| Levine Variance Equivalence Test | 1.218                  |                         |
| Mean equivalence t test | 51                     | 38.96                   |
| Standard error     | 1.278                  | 1.325                   |
It can be seen from Table 3 that the significance probability value of the F test is 0.275, which is greater than 0.05, so the analysis is carried out according to the column of "Assumed Equal Variance". Significance (two-tailed) indicates the probability of the double-test t-test, which is used to test the key value of the difference in the mean. Currently, this value is 0.996, which is greater than 0.05, indicating that there is no significant difference in the performance of the two years. In view of the above results, the author conducts an in-depth analysis on it, and believes that during the implementation of the "Golden Course", the difficulty of the course, teaching requirements and homework difficulty has been increased, and the evaluation methods are more diverse and stricter. Therefore, the data cannot fully reflect the "Golden Course". The teaching effect of "Lesson". However, through the full participation in the course and the interviews with the teacher team, the author believes that the students’ performance in the classroom is active and the participation in the classroom has increased significantly compared with the previous sessions. The topic selection, creativity, shooting methods, and shooting skills of the four practical exercises and the post-production can reflect the ingenuity of each student and the brainstorming of the group, and the students and teachers are very satisfied with the result of the film. Therefore, although the final scores of the two students are not obvious, they have improved.

4.2. Improvement of Student Satisfaction and Comprehensive Ability

In order to be able to test the teaching effect, to have a more comprehensive understanding of the implementation effect of the online and offline hybrid "golden class" and the actual ideas of the students, to provide students with better support and services in the future, and bring a better learning experience, The author designed the questionnaire for the "Survey of Online and Offline Hybrid "Golden Lesson" Learning Effects". Investigate the students in this class. The questionnaire is divided into three parts. The first part is a survey of the basic situation, the second part is a survey of the online and offline hybrid "golden lesson" teaching effects, and the third part is an open question. In order to learn more about the learners’ satisfaction with the online and offline hybrid "Golden Lesson" teaching effect, the author analyzes the feedback results from the following four dimensions: online and offline learning effect satisfaction, group collaboration satisfaction, and evaluation method satisfaction, Overall satisfaction, and comprehensive ability. There are 25 questions in total, and they are arranged in the form of a Likert scale. Each question in this part has "strongly agree", "agree", "general", "disagree", and "strongly disagree" "Five options, of which 1 represents very agree, 2 represents agree, 3 represents general, 4 represents disagree, and 5 represents strongly disagree. The author uses SPSS 24.0 to analyze the reliability of the questionnaire, as shown in Table 4.

| Table 4. Reliability analysis of the questionnaire |
|-----------------------------------------------|
| **Content**                                  |
| Mean | variance | Cronbach a | Overall Cronbach a |
|------|----------|------------|--------------------|
| Online and offline learning effect           | 2.188     | 0.513      | 0.843              |
| Teamwork                                   | 2.155     | 0.798      | 0.65               |
| Evaluation method                          | 2.19      | 0.942      | 0.627              |
| Overall satisfaction                       | 2.353     | 0.599      | 0.87               |
| Comprehensive ability                     | 2.034     | 0.541      | 0.689              |

5. Conclusion

Establishing an online tutoring platform system for art students based on the campus network is an important form of campus information education construction. It has the characteristics of rich resources, strong autonomy, strong artistry, strong atmosphere of the times, and good interactivity. In response to the difficult situation of starting from scratch for college network art students or inter-professional students, as well as the urgent need to solve the problems of insufficient teachers and incomplete educational resources in the implementation of the new curriculum reform, we have built a network-based art class. The classroom teaching platform system solves many problems in college art network teaching, and promotes the pace of campus information construction.
Acknowledgments
Social Science Planning Fund Project of Xi’an City in 2021 Project Name: Study on the Path of Xi’an Folk Art Involvement in Rural Cultural Tourism Construction from the Perspective of Cultural Memory (Project No. YS17)

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