

# Design of English Teaching System Platform Based on Multimedia Network-Assisted Instruction

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**Abstract.** Multimedia network-assisted instruction (mcai) provides intelligent support for innovative English teaching. By giving full play to the advantages of multimedia network-assisted instruction (mcai), it presents a vivid and three-dimensional English classroom for students, it will improve the efficiency of English teaching in an all-round way and improve students' understanding and cognition. Based on the analysis of the design principles of the English teaching system platform based on the multimedia network-assisted instruction (mcai), this paper pforward a design scheme of the English teaching system platform based on the multimedia network-assisted instruction.

**Keywords:** Multimedia Network, Assistant teaching, English teaching system, Platform design

Multimedia network-assisted teaching makes up for the deficiency of traditional teaching mode and the renewal of teaching means. On the network platform, students can give full play to their learning initiative. More and more foreign language teachers are using network-assisted teaching mode to reduce the time of intensive teaching in the classroom and provide students with diversified choices for autonomous learning.

## 1 DESIGN PRINCIPLES AND REQUIREMENTS OF ENGLISH TEACHING SYSTEM PLATFORM BASED ON MULTIMEDIA NETWORK-ASSISTED INSTRUCTION

There is room for English teachers to improve their research through multi-media. English teachers bring the concepts of classroom-flipping, mooc-ing and web-based platform into teaching, promoting new research directions as well as practice, in turn, it will promote the improvement of teaching practice. The multimedia network platform has further enhanced the English teaching condition, provides more opportunities for the teacher.

### 1.1 Principles of system design

In the process of designing an English teaching system, we must fully embody the principle of student-oriented, meet the needs of different students in learning English on the basis of practicality, and cooperate with the functions of fast data transmission and sharing, etc. , fully demonstrate the value of the system designed. When designing this system, we must consider the security of the user as far as possible, and improve the security of the account and password, so as to meet the security requirements of the system operation. At the same time, English teaching system should be designed as much as possible using multi-layer architecture, and taking into account the practicality of the system in teaching, to ensure that the system has a strong scalability. When building the system, the related technical scheme should have good connection and operability, and according to the relevant international standards, implement the standardized connection of the SSTEM interface, so as to lay a solid foundation for the normal operation of the system.

### 1.2 System requirements analysis

Under the streaming media technology, the corresponding English distance teaching system is designed, which can provide the teaching environment of unlimited time and place for English auxiliary teaching, students can use the network and the existing teaching system to achieve interaction, the use of English teaching system for a variety of

network resources to provide more autonomous network interactive environment. When designing an English teaching system, it is necessary to integrate different types of modern network technology on the basis of keeping the system as an assistant to English teaching, so as to optimize the design of the whole system, it is convenient for users to browse the information of the English teaching system and can meet the needs of users with different English levels. The design of English teaching system based on streaming media technology can better collect all kinds of teaching resources, enable learners to use the internet to share distance English teaching resources, and ensure the design system to meet the actual needs of users.

### **1.3 System advantages**

Network education is a new network learning environment which is made up of multimedia network learning resources, network learning community and network technology platform. With the use of electronic web-based media, knowledge and learning materials can be tailored to different combinations of learners' needs and backgrounds and delivered to students in more interactive and communicative ways. The entire teaching process will be transformed into collaborative learning and work on the web. Networks can also be used to open and provide learning resources that can be shared by various units and regions and used at the time and place each learner needs. The new educational goal is ultimately to develop mass education and education for all in a digital environment.

## **2 THE FUNCTION AND STRUCTURE OF ENGLISH TEACHING SYSTEM BASED ON MULTIMEDIA NETWORK-ASSISTED INSTRUCTION**

### **2.1 System functional design**

In the design of English teaching system, the system is designed according to the service object and the system service demand. It is divided into the following modules, which are the privilege management module, the English resource management module, etc., these functional modules are divided into different sub-functions. The main functions of authority management are user login, user logout, administrator rights and so on. Depending on authority management, users can register on the website and log on to the registered users. Administrator rights mainly include the classification of user rights, managing user passwords and so on. Students click the save button after modifying their personal information in the system, which also provides convenience for the school administration to inquire. When students want to change their user passwords, they first need to enter the user login password in the system, enter the new password, and then confirm the new password. After clicking to change the password, under the password box in the system module, there will be a prompt box to show that the password has been changed successfully. The retrieval of English teaching resources can be divided into two types: joint retrieval and classified retrieval. Based on this function, the required information can be retrieved according to the users' needs, and the results can be linked with multimedia English teaching information. English audio and video play function is to complete English audio and video play smoothly, users can also use this module to complete English teaching materials download operations.

### **2.2 System architecture design**

The system architecture is the foundation to ensure the normal operation of the system, and its architecture layout directly affects the stability of the whole system. In J2EE system, the server-side Web program is divided into different layers.

When the view layer is JSP page, its main function is the interaction between the system and the user, and the final result is displayed on the page, but the view can not carry out the actual business, such as supporting the receiving and updating of the corresponding data, enables the system interface to be updated at any time. It is important to note that the page implementation is primarily dependent on the JSP language. Add Java program fragments and JSP tags to the traditional web page HTML file to form a JSP page. When a Web server receives a req to access a JSP Web page, it first executes the corresponding program fragment and then returns the result to the client in HTML format. Program snippets support redirecting web pages, manipulating databases, and so on, which are also necessary for building dynamic web sites. All program operations must be implemented on the server side, the network transmission is only the result of the client browser requirements are lower, so that the corresponding operations.

The Service layer is between the Actin layer and the persistence layer. The main function of the Service layer is to perform logical and verification operations, such as login password verification, interface connection, etc. , and call the next layer of DAO layer to complete.

The main function of the Action control layer is to receive the corresponding reqs from the client users, and then need to invoke the model set in the business layer in time to complete the user req delivery successfully. If the user depends on the page to submit the corresponding operation req, you can call the relevant model to complete the processing, and with the view method to pass the final results to the user. In this layer, the controller is implemented primarily through two classes, Action and Action servlets, the latter receiving the HTTP response operation in the previous session, and depending on the relevant information to forward the req to the corresponding Action class. At this level, the Action is seen as an adapter that separates the req from the business logic, enabling the system to be designed to meet the user's needs.

The DAO layer is mainly used to connect to the database, or to add, modify, query and so on. In the development of J2EE, the SQL statement is usually used to complete the query operation and to access the database.

### **2.3 System database design**

Database is the storage center of English teaching system. The design of database directly affects the normal operation of the whole system. Therefore, the reasonable configuration of the database can not only improve the efficiency of data storage, but also ensure the integrity and security of stored information to a certain extent. It can provide a relatively complete function, and the data storage system used in the past if there are operational problems or emergencies, some of the data will be faced with permanent loss.

## **3 DEVELOPMENT ENVIRONMENT AND FUNCTION REALIZATION OF ENGLISH TEACHING SYSTEM BASED ON MULTIMEDIA NETWORK-ASSISTED INSTRUCTION**

### **3.1 Development build**

To successfully implement the English teaching system, its development environment is as follows: set up the operating system for Win10, and configure the corresponding My SQL5.0 database, relying on My eclipse 3.5 development platform to complete the corresponding development. This article selects Real Network Helix Serve as a streaming media server that supports cross-platform services and meets a variety of formatting requirements. The server can be used to play the current mainstream playing software.

### **3.2 Partial implementation of system functions**

Password verification is implemented for registered users, and verified users can directly access the system, while the corresponding registration interface is provided for unregistered users. This English Teaching System security user authentication, the security guard measure must create the account + the password authentication mechanism, therefore under the default condition, the user must implement the authentication when the actual login, then determine whether it is a legitimate user, if it is a legitimate user can successfully login and access the system.

### **3.3 Implementation of video on demand**

In the process of VOD connection, the user selects the content to be reqed and the client sends the response req to the server. After getting permission from the server to create a connection, the user can control the speed of the video file by starting, stopping, and fast forwarding. VOD also belongs to unicast behavior, each user needs to query the server separately, and the server also needs to send the corresponding application data packet to each user separately, each node needs to send the same information to multiple targets, send an identical copy to each recipient, effectively preventing data from being sent to people who don't need it. But each copy must be through the network will occupy a large number of network resources, learning efficiency is low. However, because of the increasing number of VOD users, the server has to bear a heavy burden and its response speed is slow. In order to ensure the normal operation of the system, high-end hardware and its broadband must be used to ensure the quality of service. This function is designed so that students can choose their own learning content and provide corresponding VOD services.

### **3.4 Effective use of multimedia network platform resources**

In the past, English teaching faced many difficulties, one of which was the large number of students in class. For example, listening, speaking, reading, writing and translating were the important parts of English teaching, the teaching of listening and speaking is limited, and the improvement of students' listening and speaking ability becomes a big problem. At this stage, the test-taking ability of the students improved quickly, listening and speaking ability has not improved significantly, in the classroom, the teachers are tired of explaining the text, even if there is time for students to say, the students because of face, dare not open their mouth. The network platform has solved this problem. Students do listening and speaking training on the network platform after class, according to the homework assigned by the teacher. They practice over and over again to improve their basic knowledge, network platform for students online long time to give encouraging bonus points to stimulate students' interest in learning. Network-assisted instruction has changed the traditional teaching time into indefinite time, indefinite place, personalized autonomous learning. Students can study anytime in a multimedia classroom, an electronic reading room in a library, or on their mobile phones, making their own study plans to make the most of their spare time, and teachers can answer students' qions online, understand the students' real English level, so as to better guide the students. Through the network to broaden students' horizons, timely understanding of the latest trends in education and teaching, to develop students' ability to solve problems independently. Teachers can lead students to use the Internet to learn about the application of knowledge in daily life and the latest developments. They can give students some research projects and ask them to come up with plans and implement them, this will greatly improve the quality of students. This not only enhances the study interest, also has manifested the study value, has manifested the quality education thought.

#### 4 CONCLUSION

The multimedia network teaching uses the modern information technology, realizes the long-distance real-time exchange and the interaction, the education object may establish the contact with the teacher and other students through the network, completes the teaching task. Teachers can broadcast content through the network system, students encounter difficulties, can at any time to the teacher to ask questions, the teacher to give answers. The multimedia courseware that the student uses has very good interactivity, pass the network technology can appear in the process according to the student answer a question, make corresponding analysis and prompt. By giving full play to the advantages of resource sharing, it provides more possibilities for students to learn, and also enables English Continuing education to achieve a healthy interaction between teachers and students, thus improving the effectiveness of English Continuing education.

#### REFERENCES

- [1] Fanqiu Wang. Discussion on Using Network to Assist Oral English Teaching [J]. Journal of Anhui Electronic Information Vocational and Technical College, 2017, 16(04): 6-58+71.
- [2] Linlin Wang, Yao Ding. Application strategies of network-assisted teaching [J]. Modern Computer (Professional Edition), 2017, (18): 24-28.
- [3] Xinhe Duan. Discussion on network computer technology-assisted college English teaching strategies [J]. English Square, 2018, (10): 114-115.
- [4] Xiaoyao Sun, Shuman Chang. The advantages of network-assisted English teaching in the process of college English teaching [J]. Overseas English, 2019, (20): 171-172.
- [5] Shu Yang. The advantages of network-assisted English teaching in the process of college English teaching [J]. Contemporary Educational Practice and Teaching Research, 2020, (11): 12-13.