Research on Interactive Application of College English Network Multimodal Teaching Platform

Guanghui Fu[1], Manjiang Zhou[2,*]

[1]School of Foreign Languages, Hubei University of Arts and Science, Xiangyang, China
[2]No.1 High School of XiangYang, Xiangyang, China
*Corresponding author

Abstract: The construction and sharing of English resources and the interactive use of English network multimodal teaching platform can improve the quality of English teaching in colleges and universities. This paper takes "English network resources + interactive use of English multimodal teaching" as the entry point to explore the great potential of English teachers guiding online learning, learning tasks, independent training board content and interactive use of multimodal network teaching platform model in English network teaching, especially English resource construction and content sharing design training process, modules and network teaching to achieve teacher-student interaction Participating in the learning process, guiding college students to reach the independent learning mode, allowing students to self-manage and self-control the English learning tasks to be completed independently.

Keywords: Multimodal Platform; English Resources; Web Technologies; Shared Design

1. Introduction

With the changes of the times, the traditional teaching in colleges and universities puts forward higher requirements for the construction of Information Technology, which also accelerates the continuous development of Information Technology from the other side[1]. Such as that construction of information database and software, the functional requirement of DW/DM database, which can collect, store, retrieve, analyze, apply, and obtain the result information from the evaluation of set of questions, are put forward[2]. The research and development of software construction has become more and more important, and remote access service and multi-modal network autonomous learning have emerged. The sharing mode of various application network platforms has outstanding advantages and remarkable achievements, and has also become one of the leading teaching tasks of multi-modal interactive application in English network teaching.

The concept of English network interactive teaching needs to be upgraded with technological progress. A variety of media, such as Information Technology Resource function storage, fast and diversified text, voice follow-up, short sentence Correction, graphic guidance, video observation, teachers "fine works, micro-courses, etc[3]., Create an all-round English learning environment, and put forward technical requirements for diversified multimedia technology, transmission and access speed, etc. In this paper, how to build a high-quality network multi-modal English Resource sharing platform, put forward an efficient network interactive English Resource platform framework. The framework can effectively guide teachers and students to use various autonomous learning training functions in the English platform module, and highlight the effect in shared and interactive autonomous learning.

At present, the construction of digital resources and network technology have produced substantial results in improving the efficiency of English education[4]. The construction of multi-modal platform for English autonomous learning brings teaching convenience for Information Technology and English interactive teaching. The use of "English language autonomous learning demonstration center" is an important part of our school's English network teaching, accounting for 50% of the annual school hours. Its main contributions are:

(1) It can make English learning share a lot of multi-modal resources.

(2) Undertake the task of cultivating English teaching.

(3) Improve students "ability and quality of autonomous learning.

(4) Improve students" English learning effect.

The Ministry of Education requires the implementation of web-based autonomous learning mode in English teaching, and colleges and universities in Hubei Province take the lead in choosing this kind of brand-new English language learning Center platform system to build. The architecture of the system, pay attention to hardware before software, advanced and practical functions, stable and reliable operation, through a wide range of resources and convenient sharing to ensure teaching. No matter now or in the future, the co-construction and sharing of network autonomous learning interactive platform is one of the important teaching means in College Network teaching. Sufficient accumulation and storage of knowledge resources is an important guarantee for any education, especially English network interactive teaching, so cultivating English network interactive teaching can continuously and effectively stimulate students "self-control and self-study ability[5].

2. The main characteristics of multimodal network teaching and interactive application

The construction of English multi-modal network teaching resources is to integrate excellent teaching resources, realize knowledge co-construction and sharing in a centralized and unified management, create an excellent Resource Team atmosphere, and thus achieve English teaching information Technology. The mode of English Teaching Resources co-construction platform mainly provides excellent English multimedia courses with network interaction in centralized management system, opens a new mode of English education and teaching reform, and builds a grid bridge integration mode. In the realization of the development of a single set of software multi-modal network technology courses, we pay attention to the simultaneous presentation of technical services in the modules of film and television listening imitation, short sentences and pronunciation, shallow sound change, scene image analysis, Animation Pitch guide, video, teacher courseware, excellent courses, micro-courses and electronic courseware. The design of software platform and the sharing of rich resources can allow English online learners to visit and study at will in any library, classroom, office, dormitory and other places with network (Table 1). In order to avoid the situation that English teachers waste a lot of time and the teaching content is single, we use interactive construction technology to provide teachers and students with convenient and fast operation experiment instructions and platform, so as to provide teachers and students with the space to ask questions and answer answers at any time.

Table 1: Comparison of power load forecasting of 403 line

Software platform	Address	Browser	Application direction
New concept foreign language network teaching platform	http://172.33.10.31/npels/	IE9 Extreme speed mode	Music, sports and art public course
New vision College foreign language teaching platform	http://172.33.10.2/index.php	IE9 Extreme speed mode	School-wide public courses
Shige foreign trade practice platform	http://172.33.10.102/simtrade/login.aspx	IE9 Extreme speed mode	Business English
English man-machine translation teaching practice platform	http://hbuasen.fycat.com	Firefox 74+	English translation
Business English training platform	http://172.33.10.33:8091/swyy	Chrome80	Business training
Japanese man-machine translation teaching practice platform	http://hbuasja.fycat.com	Firefox 74+	Professional Japanese
College FTP Resource Commons	ftp:// enstu.hbuas.edu.cn	IE9 Extreme speed mode	Hospital use

2.1. Generation of multi-modal interactive dynamic information transfer process

At present, the market software technology development company organizes professional teams to jointly develop and design the English network resource library platform with colleges and universities, which has rich functions and ensures online learning at any time through teachers "teaching and students" access[6]. For example, English reading library software platform "English reading library" is an intelligent learning system designed based on the modern teaching and training theoretical system, which takes expanding students "reading volume as the standard, takes text display, mainly trains students" oral

ability as the goal, integrates massive online learning resources with teaching design, gathers students "autonomous learning ability as the purpose, and provides comprehensive subject digital teaching solutions for teachers and students. In the platform, seven efficient English sentence training techniques, such as word-by-word, line-by-line, paragraph-by-paragraph, word-by-word, syntax, paragraph-by-paragraph and text, are integrated with the rules of students "time and eye perception of reading content. Combined with the three different reading comprehension modes of sentences and words,"appearing but not disappearing,""disappearing but not appearing," and "complete reading," the platform can further improve students "ability to take key information in reading. Through the configuration of 70 words in 1 minute at a slow speed, 100 words in 1 minute at a medium speed and 120 words in 1 minute at a fast speed, the reading ability of students can be improved in an all-round way and step by step. Another platform type is to share a large number of learning resources on the server through the FTP server for teachers and students to download and observe learning. The technology is classified and managed by professionals, and teachers can download and copy the content and carry it with them to multimedia classrooms, computer rooms, or share it with students in different places to share learning.

2.2. The training objectives of English teaching and the requirements of network +classroom interaction

Based on the "English curriculum teaching requirements" issued by the Ministry of Education and the actual teaching situation of our school, the educational Administration Department of our school proposes to use "classroom +network" multi-modal interactive teaching in English teaching reform. By further improving the "four systems in one" English interactive teaching system and establishing a teaching management system that matches the "classroom +network" teaching system. Especially for the network teaching of writing and translation courses, we must make good use of the "English man-machine translation teaching practice platform" to train important talents for professional English. In the research and practice of implementing the online interactive teaching reform of English courses, we should cultivate English teachers "ability to use modern Science and Technology, and at the same time carry out the guidance of learning computer technology, so as to improve the efficiency of online interactive teaching of English teaching.

In terms of teaching objectives, English majors are based on TEM-4, TEM-8, speech competition and English major direction. College English is based on CET-4, CET-6 and postgraduate English (70 points) or above. The above passing rate is aimed at 85%, which requires paying attention to cultivating students "comprehensive application ability of English level, especially listening and speaking ability, so as to be able to communicate fluently in English in future work and social communication, which requires English teachers to work hard. If the professional team strength in the discipline is insufficient, it will be difficult to complete the above target responsibility system.

Due to the limited resources of English education in China and the different educational concepts at home and abroad, it is impossible to obtain a large number of fresh audio, video and cultural materials from overseas. It is also an important content to choose the best among the best to learn how to obtain platform resources. At present, the content of resource collection mainly comes from two aspects:

(1) Various platform software on the market (oral platform, interactive English, Business English). However, some resources in the platform are limited, and the work of social teams and universities belongs to different directions and has certain differences, so there are many contents that do not conform to the teaching materials, and the pertinence and integrity of the contents need to be filled.

(2) English teachers can provide the teaching cases used in normal teaching, but the knowledge points in preparing lessons are old and insufficient . There are also problems such as low system, low scale, low level of resource content and insufficient team strength.

3. Various forms of English Teaching Resources and the realization of multimodal interactive sharing

We have been engaged in teaching in the laboratory for a long time, has rich experience in English teaching, and keeps up with the pace of the times, strives to learn the laboratory construction and discipline Frontier knowledge, is familiar with the development direction of professional English Discipline, has completed various laboratory construction projects, and insists on long-term systematic research.

In the construction of the campus English network Teaching Resource Center, we are responsible for

the construction and operation of many laboratory hardware and software tasks, and have solved various technical problems encountered in the hardware and software.

The purpose of the construction of English network teaching resource Bank group is to provide a space and place for students to exchange visits between teaching and learning for their network +classroom learning and autonomous learning after class. The construction of multi-modal English Network resource library will be based on the principle of further improving, filling and optimizing the quality of information resources, and finally form a standardized management mode of English classroom +multi-modal network teaching information independent communication. The platform to be established by our school is to be named as the provincial "English language autonomous learning demonstration center." Main functions are as follows:

3.1. Technical management Authority and setting of data type in network environment

At present, the established data is only accessed online, and each English teacher has his own courseware and other resource data.once the courseware data becomes the access object of the whole school, it must have a better storage mechanism to protect and encrypt. Therefore, firstly, the centralized data can be more effectively classified and designed; secondly, the whole resource data can be more conveniently searched and shared; thirdly, more documents and materials before can be digitized; fourthly, the problem of courseware, text, video and the like loss caused by the mobile use of teachers can be solved.

Central Africa Data achievements in English teaching are the painstaking efforts of every teacher and students.the functional design needs to realize long-term preservation, convenient access, establish a fixed management process, and form a knowledge inheritance system in the campus. The integration of the system is completed, all the data are effectively collected, according to different subject resources set up corresponding user-defined management rules, limit the corresponding permissions, to achieve the purpose of interactive access for the whole school teachers and students. It is very important to unify the subject achievement data produced in the process of college English teaching. It mainly includes:

(1) Diversity of data types: video, audio, pictures, documents these data are produced in the teaching process, not only the data itself is different in type, but also the data format is different. Even if all video data, different attribute coding methods lead to inconsistent data, which puts forward high requirements for unified technical management. There are various data types that are different when labels can not be set using a relational database. For example, when a video is inserted into PowerPoint, the function can be realized normally in the production of this computer, and it is difficult to realize the video playing function by copying to another computer. It is necessary to establish a point here, and right-click the point to establish a hyperlink to completely realize this function.

(2) The unknown of data content: the English teaching resource library is a collection of resources, its content has been identified, but the data generated in the teaching process can not know the content of the data in advance. For example, photography and video works can not know in advance what the specific description of the works is, and the paper also does not know the content and views discussed by each student, which relies on professional and technical means to complete the connotation of differentiated data.

(3) Openness of data access: most of the English teaching resource library is aimed at teachers and students, and our teaching results can be shared in a wider range, so as to truly produce practical value. This sharing can be aimed at teachers, students, departments, groups, etc. It is necessary for technical support to adopt various sharing methods (even using the internet), set control data access rights, and prevent the theft of achievement data and copyright disputes, which puts forward higher requirements for data management technology.

(4) Multi-dimensional data utilization: in addition to being displayed for access, the greater value of teaching results data lies in the "automatic" mining of more value by the accumulation of data quantity, and these tasks need to be set up in the school Network Center. The resource system of "English language autonomous learning demonstration center" is shared within the school, and does not provide open interface settings. For example, in the epidemic situation in the last semester of 2020, English online learning, teachers arranged learning tasks on the platform, set exercises, etc. The technology was opened by the network Center according to the platform website, so that students could learn English independently at home normally, and the daily access data of the server was consistent with the independent learning in school.

3.2. Method for realizing multi-module service and multi-modal interaction structure

The establishment of the "English language autonomous learning demonstration center" shall have the functions of unlimited time and place in the campus network, convenient access to upload and download, and at least the following functions:

(1) Information Center: set up the management section of information announcement of resources in the school; establish interactive information exchange between teachers and students according to classes; provide point-to-point services for teachers and students such as professional English and college English. The use of personal information in the center requires statistics, display and timing functions, specifically to each student browsing by hour, minute and second by the server monitoring statistics file records, students completed in the whole system of homework, exercises and examinations, set up English teachers to arrange and review the results function.

(2) Lesson preparation center: English teachers 'lesson preparation resources upload to realize the functions of sorting, making, storing and distributing. For example, if the students 'homework, examination and teaching content are not completed, the real-time reminding function shall be set, and the teacher shall use WORD modification method to review and modify the students' homework. Establish a separate personal space for teachers to store personal teaching materials, while selective access to use with students.

(3) Teaching Center: voice classroom teaching function and network remote teaching function, to realize the seamless connection and application of micro-teaching interaction.

(4) Learning Center: teaching guidance, learning and training, paperless examination, team resource space, management analysis, question answering and other comprehensive functions.

(5) Counseling Center: point-to-point or multi-point direct information exchange between teachers and students; set up a real-time monitoring experience and question Exchange Forum between teachers and students, so that students can consult and counsel questions without limitation of time, place and class, and answer to achieve barrier-free communication; set up a teacher's teaching space resource library, carry out personalized teaching methods and resource sharing for designated students, and set up a high-quality class of foreign languages and multiple disciplines.

(6) Training Center: divided into knowledge points, levels, situations (listening, speaking, reading, writing, translation) as the focus, topic type or special category, a comprehensive way to train practical English skills and skills; test students "special exercises to provide topic resources and real-time comments ability.

(7) Examination center: realize the unified examination service function of the whole school; have 1000 points and real-time online examination actual cases; can implement large-scale standardized examination, the system is compatible with the TEM- 4, TEM-8 and other general examination questions format and the technical support that teachers use Word to make a set of questions and import them into the database. Prevent students from misoperation offline, fraud, computer viruses and other destructive acts. Marking tasks will be distributed to teachers in a variety of ways (question type, test paper, class).

(8) Resource Center: provide the capacity guarantee of multiple servers to ensure the demand of foreign language teaching resources; realize open import and multi-compatibility mode, which is compatible with the common format of the internet, and is convenient to obtain the latest teaching materials in the teaching environment; adopt the technical setting of convenient and fast import of computer directory, and the speed is not more than 10 minutes.

(9) Management and analysis Center: realize the educational Administration management monitoring system, record the process and learning content of students and teachers in the Learning Center, and provide year-end teaching analysis and management; query and download the examination papers, examination students and various on-demand data of each examination, analyze the rationality of the results, and evaluate the comprehensive learning level of students. Establish the data interface API Exchange visit function with the educational Administration functional department of the school.

3.3. Management requirements of interactive data mixing in network environment

Through the system management function, the professional administrator of the resource library of the platform can be controlled and managed, any resource column in the platform can be controlled, added and deleted, the access authority of the content of the system resource library group and the

opening time can be set, and teachers can be organized to upload the content of teaching materials at ordinary times for review, management and screening.

(1) Data collection and selection, data storage and classification according to unified format and unified design, so that teaching use is convenient and fast, access speed is not delayed, user-defined labels and attributes are classified according to unified list, system structure is optimized, link standards are connected with the standardization of hardware, software and resources.

(2) The streaming media format is unified, the teaching video production standard, the data transcoding is supported by AVI, mov, rmvb, RM, FLV, mp4, 3gp, etc. MOV is a QuickTime movie format, which is an audio and video format developed by Apple company.

(3) Professional Question Library classification, the establishment of the year, semester, mid-term, final examination question Library, the document form is required to be classified by grade. Build a variety of special TEM-4, TEM-8 simulation questions, college English CET-4, CET-6 simulation questions library.

(4)Make high-quality online courses, set up an online time-based learning course composed of excellent teachers team, read, choose to read, do questions, can provide services for elective courses or various online teaching projects.

Acknowledgements

References

[1] Wei C, Zhong L. Research on the problems and countermeasures of higher education management informatization development in the computer internet era. Journal of Physics: Conference Series, (2021), 1992(2).

[2] Yu S. Study on the computer database technology in college English teaching. Journal of Physics: Conference Series, (2021), 1744(3)

[3] Liu J. An Experimental Study on the Effectiveness of Multimedia in College English Teaching. English Language Teaching, (2010), 3(1).

[4] Parris H, Estrada L M. Digital age teaching for English learners. The Handbook of TESOL in K-12, (2019), 149-162.

[5] Wang Y. English interactive teaching model which based upon Internet of Things. 2010 International conference on computer application and system modeling (ICCASM 2010). IEEE, (2010), 13: V13-587-V13-590.

[6] Zhang Y. Design of the English Teaching Network Resource Database under Cloud Environment. 2021 International Conference of Social Computing and Digital Economy (ICSCDE). IEEE, (2021), 148-151.