



Development of English Online Examination System Based on Computer Technology

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Abstract. With the continuous reform and development of China's education system, English education has become an important part of China's education system and an indispensable part of the development of China's diversified education system in the future. In recent years, with the rapid expansion of the scale and number of domestic educational institutions, extensive and centralized English examination has become a difficult problem faced by many educational institutions. In order to obtain an ideal English online examination system, an English online examination system based on cloud computing technology is proposed. The overall structure of the system is designed by using cloud computing technology. Online examination management is the core of the system. According to the examination scale and examination requirements, the English online examination process is realized through the modules of test paper management, score management and online examination. The test paper management uses genetic algorithm to determine the optimal solution of test paper. The research of this paper has practical application significance, and has certain application value and feasible guiding significance for promoting the information construction of online examination.

Keyword: Computer technology · English online examination system · education system

1 Introduction

With the rapid development of modern computer information technology and Internet technology, modern computer technology and network technology have gradually begun to be deeply applied to various fields [1]. Education embodies a country's comprehensive national strength, and the achievement of education is through examination and practice. The 21st century is the information age, and some colleges and universities are also advancing with the times to lead the examination into the information age [2]. With the rapid development and wide application of computer, network, multimedia, communication and Internet technology, it puts forward a new model for the traditional school running [3]. English is a compulsory course in Chinese schools. Similarly, College English is also a compulsory course in many universities [4]. The traditional test

method of College English is to take a written test in the classroom according to a certain number, such as student number, so as to test students' learning [5]. Now the development of computer hardware technology has reached a fairly high level, but the development of distance education software is still in its infancy. With the continuous in-depth development of this technology, it is required to have a better and more perfect software system applied to distance education, which puts forward higher design requirements for software designers [6]. People urgently need to use these technologies to carry out online examination, so as to reduce teachers' workload, improve work efficiency and improve the quality of examination, so as to make the examination more notarial and objective and stimulate students' interest in learning [7].

Computer applications have been applied to every corner of our life [8]. In the field of education, digital campus construction has sprung up in Colleges and universities. Digital educational administration system, digital library and office automation are no longer unfamiliar words [9]. With the continuous popularization of online examination, English online education, as a popular education, is also booming. There are a variety of English training institutions in the society. English courses are offered in the school curriculum system from primary school to university. English online examination will also become a new reform trend [10]. Online examination also came into being, and more and more online examination systems are applied to all kinds of examinations at all levels, and are more and more welcomed by colleges and universities. Compared with the traditional examination mode, based on the traditional examination room, the online examination system is designed and completed. Because of the infinite space of the network, the examination room is no longer affected by the region and tests students anytime and anywhere, Moreover, the post examination score analysis also provides teachers with teaching help, which has been greatly reduced in the examination process and link processing, and is more efficient [11]. You can also take mock exams and learn English movies in non exam time. For teachers and examination staff, this also reduces the cumbersome work of examination [12]. Therefore, paperless network online examination has been popularized and applied in many aspects in society and universities [13].

2 Research Status at Home and Abroad

2.1 Domestic Development Status

At present, China's education is in the stage of prominent contradiction between supply and demand. The serious backwardness and shortage of educational software resources, less investment in education, high educational cost, shortage of teacher resources and the continuous growth of the number of students make China's traditional education and examination methods can no longer meet the needs of the rapid development of education. The profound reform of domestic examination content, examination method and examination form has a far-reaching impact on the construction of domestic examination information. Although it has experienced many upgrades, and the forms and means of examination have been constantly updated and changed with the passage of time, its basic examination mode has been extended to this day. Similar to the computer online examination system, it is necessary to establish the test question information database in

advance, and the information database needs to be continuously maintained and updated. As an important part and development branch of online distance education, networked online examination has been developed very mature in some foreign developed countries. As a project of College English teaching reform, this subject has rich teacher team and student team resources to develop the system, and does not need to bear additional costs. Moreover, after the implementation of the system, it can be put into the College English teaching test and examination of the University, which will help to enrich the digital campus construction of the University, Improve the efficiency of examination work. At present, most of the online examination applications are online examination systems based on C/S mode, that is, install the program installation package directly on the client, and then exchange data directly with the database server. This situation will affect the security of the system. In contrast, using B / s system, data access and user interface can be shared with application logic.

2.2 Present Situation of Foreign Development

Many international examinations in the world use online examinations, which are conducted in real time through the network. Many domestic examinations are also slowly carried out by means of online examinations. The examination mode has created the mileage of computer information examination. In this system, many functions such as examination question type management, examination question loading management, digital examination management, intelligent marking management and Score statistical analysis management are integrated, which has realized the advanced computer automatic examination management mode and took the lead in implementing the advanced examination technology platform. The mode of providing College English online teaching resources is shown in Fig. 1.

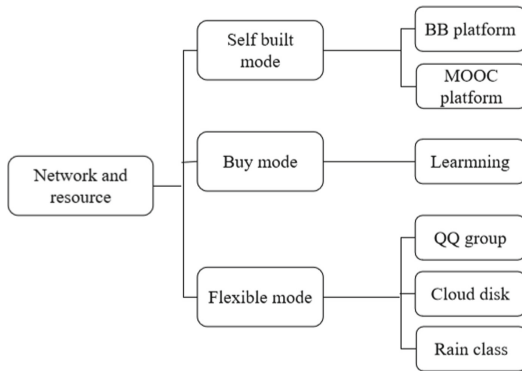


Fig. 1. College English online teaching resource provision model

The background of the subject of network online examination system is the trend of educational informatization and the construction of educational informatization system in China. The purpose is to make full use of the existing computer software, hardware

and network resources of the school to realize the paperless examination by using computer network, so as to avoid the shortcomings of traditional manual examination. The main advantage of realizing online examination through the network is that it can realize the separation of teaching and examination and the full automatic management of examination work. It can make effective use of the software and hardware resources of the campus network to make it play its maximum effectiveness and better serve the teaching, scientific research and management of the school. It can dynamically manage all kinds of examination information. The examination time is flexible and can take part in the examination at any time within the specified time period. The biggest feature of computerized examination is fast marking. The system can give objective examination results on the spot at the end of the examination. At the same time, computer marking not only gives candidates the greatest sense of fairness, but also its automatic paper generation, marking and scoring functions can reduce teachers' work intensity. Establish the correct model in the problem domain. The so-called object-oriented development method is a development method that takes object as the center and class and inheritance as the construction mechanism when people understand, understand and describe objective things and build corresponding software systems for them.

3 Design of English Online Examination System

3.1 System Design Objectives

Before the system design, we should first clarify the objectives of the English online examination system, so as to facilitate the further development of the design work and the smooth progress of the follow-up development. The overall goal of English online examination system should be to improve the work efficiency of examination management and reduce the burden of various personnel of examination management. At the same time, the system should be able to provide candidates with the function of online query results. In the early stage of system construction, the overall planning shall be made to ensure that the, application platform and terminal equipment can not only meet the current requirements, but also easily expand the future business needs, and have the ability to make a smooth transition to the future technology; In the system planning and design, we should ensure that the examination system has good secondary development function to meet the needs of system self expansion. The core of the paper generation strategy based on random algorithm is to use the random function or random quantity provided by the computer to continuously extract the test questions that meet the control indexes into the test paper according to the control indexes of the paper generation state space until the paper generation is successful or the test questions that meet the control indexes can no longer be extracted from the question bank. The core elements and relationships of the co creation and sharing model of educational resources are shown in Fig. 2.

In improving data quality, people need to integrate heterogeneous data sources in some industries with poor data quality, such as establishing consistent protocols among multiple data source owners and providing corresponding interfaces; Strengthen data quality supervision, systematically record and track data quality, such as increasing standard research on data traceability, processing history, evolution and update, promoting

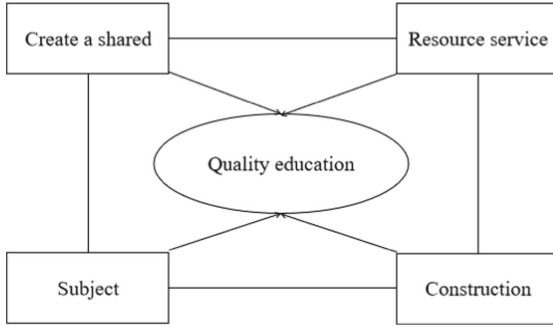


Fig. 2. Core elements and relationships of educational resources co creation and sharing model

open sharing of data, establishing some big data public resource databases, and obtaining average results through multi-party data processing, so as to improve the accuracy of artificial neural network prediction. It not only facilitates the examination of many industries and institutions, but also provides an effective way for people to test and evaluate. The establishment of the system not only saves a lot of social human and material resources, but also lays a foundation for students in remote areas to learn advanced knowledge independently. In order to better understand students' learning of College English and test the teaching quality, our university began to consider using computer technology to develop a set of Web-based Online English examination system to realize the "paperless" College English examination.

3.2 System Background Management Function Design

The background of the English examination system is an operation interface for system administrators, teachers and marking personnel. The management of test paper generation and marking of the system is carried out in the background. Figure 3 shows the implementation process of English teaching and examination system based on computer technology environment.

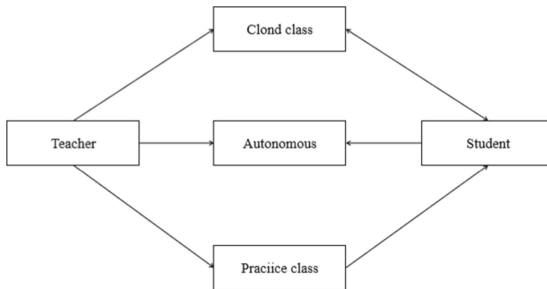


Fig. 3. English teaching and examination system based on computer technology environment

In terms of design, the English examination system adopts the standard software engineering design mode and uses the standardized software engineering design theory

to design the functional architecture of the system. The function design can be carried out in a modular way, and the system can be gradually divided into modules with independent functions, so as to enhance the scalability of the English examination system. The front desk of the online examinee system is mainly designed for examinee services. The administrator manages users in the background, and the examinee registers through the registration function provided by the system, as shown in Fig. 4.

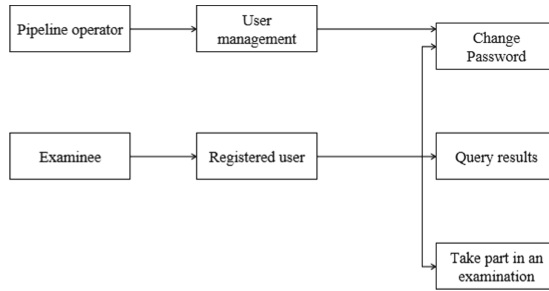


Fig. 4. Functional structure of English online examination system foreground examination system

And the foreground design of the system has the registration function, which is very important for the registration of the system. The question bank of English examination mainly includes English judgment questions, multiple-choice questions, single-choice questions, English blank filling questions and other management modules. The question bank inevitably involves the management of test questions, and its business function is designed to manage the addition, deletion and modification of English test questions. Figure 5 shows the database management diagram:

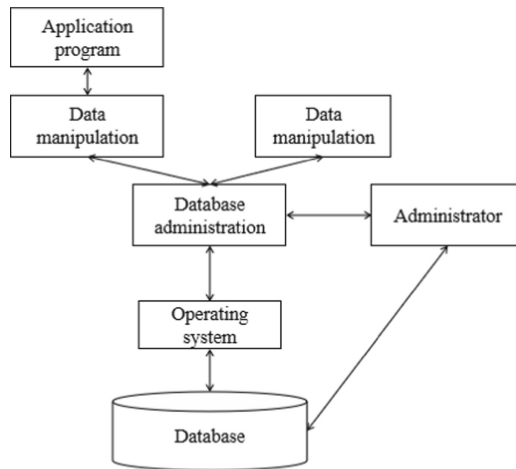


Fig. 5 Xx

For the modeling of online English examination system, this paper adopts the object-oriented software design pattern, establishes the system requirements, determines the required business class operations and the design of the relationship between business classes, so that the internal parts of the system programs depend on each other. In the administrator function module, the sub function module mainly includes authority setting, user management, data management, etc. Among them, permission setting is mainly responsible for reviewing and setting the system user permissions. The user management module realizes the management of adding, deleting and modifying user information with the help of database management tools. The data management module is responsible for data import, export and backup. Add the design of breakpoint continuation function to ensure the normal progress of the examination. When there is a crash or sudden power failure, restart the computer and log in to the examination system again. The breakpoint continuation function will start the original test paper from the time of power failure or crash, and continue to let students answer questions, so as to ensure the timely progress of the examination.

4 Conclusions

With the development of science and technology, the Internet has gradually integrated into people's life and has had a lot of positive effects on modern education. The computer online examination system described in this paper is a computer information management system bred under the development trend of computer network technology. The design and implementation of online examination system is a complex and heavy work, especially it involves a lot of practical problems and technical details. There are many technical difficulties to be solved in the development process. The system belongs to a paperless system. Students do not need to use paper in the exam, so as to reduce the waste of paper. The online English examination system based on Web has good universality and flexibility, and has good application value in teaching reform. At present, college examination basically adopts the separation of teaching and examination. Developed according to the needs of College English public curriculum reform, its main function is to reduce teachers' workload and improve work efficiency, simplify the examination process, greatly reduce the cost of examination operation and management, improve the quality of examination, and make the examination more notarized, objective, scientific, formal and standardized; The real realization of paperless network examination and learning enriches the construction of digital campus; Adapt to the reform of CET-4 and CET-6 computer examination in advance.

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