

ZHAOQING UNIVERSITY ASSIGNMENT COLLECTION SYSTEM

DESIGN AND IMPLEMENTATION

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ABSTRACT

This study focuses on the design and implementation of an assignment collection system for Zhaoqing University's School of Foreign Languages. With the rapid development of information technology, traditional methods of assignment collection and management are no longer sufficient. This paper proposes a solution based on the online file collection system provided by Kingsoft WPS, which combines the advantages of technology and user-friendliness. The system is designed to meet the specific needs of the School of Foreign Languages, with features such as WeChat submission of assignments, support for multiple submissions and revisions, a user-friendly interface, and strict security measures. The system aims to optimize the interaction between teaching and learning, providing students with a convenient, flexible, and secure method of submitting assignments. This reflects part of the digital transformation in the field of education, focusing on providing high-quality education while meeting the individual needs of students. The research has significant implications in several aspects, including promoting the process of informatization in higher education, improving the efficiency and accuracy of assignment collection, and providing a valuable reference for other universities facing similar needs and challenges.

Keywords: Assignment Collection System, Digital Transformation, User-Friendly Interface, WeChat Submission, Security Measures.

I. INTRODUCTION

With the rapid development of information technology, various educational management systems and academic platforms have undergone significant transformations. In the field of educational management at the School of Foreign Languages, Zhaoqing University, the collection and management of assignments is a crucial task. This task is key to ensuring teaching quality and improving educational benefits. Therefore, the design and implementation of an efficient and convenient assignment collection system is essential for the School of Foreign Languages, Zhaoqing University.

Background

With the rapid development and widespread application of information technology, the field of education is undergoing profound digital and networked changes. This trend has also received a positive response at the School of Foreign Languages, Zhaoqing University, especially in the collection and management of student assignments. The background of the problem described in this paper is that the Academic Affairs Office has proposed that the college should archive the electronic version of students' usual assignments at least four times. These electronic archives must be complete, reliable, and easy to manage. However, traditional assignment collection methods no longer meet these needs, as they often involve a large number of paper documents, which are not only inefficient but also prone to loss or damage of files. Therefore, how to collect and manage assignments in a more effective and efficient way has become an urgent problem to be solved.

To meet this need, we have chosen the online file collection system of Kingsoft WPS Company as the solution. This system is based on WPS documents and combines the WPS cloud backup database, so it has high readability, practicality, easy scalability, and universality. The choice of the system was carefully considered because it was designed according to the actual needs of the School of Foreign Languages, Zhaoqing University, and is easy to maintain and upgrade in the later stage. In addition, the system provides a file upload function to facilitate teachers and students to upload assignment files. This combination of technical advantages and user-friendliness makes the system have significant advantages in dealing with the collection and management needs of university assignments.

However, despite the many advantages of Kingsoft WPS's online file collection system, such as multi-platform support, genuine authorization, automatic classification and summary, and stable cloud services, whether it can meet the actual needs of the School of Foreign Languages, Zhaoqing University still needs further research and testing. This highlights the main goal of this paper, which is to implement an assignment collection system specifically for the School of Foreign Languages, Zhaoqing University, based on this system, to meet the requirements of the Academic Affairs Office and improve the efficiency of assignment collection and management. This not only involves technical and engineering issues, but also involves the promotion of the process of educational informatization in the college, to cope with the challenges brought by the rapidly developing digital age. This research also provides valuable experience and reference for other universities to better cope with similar needs and challenges.

Research Purpose

The primary goal of this research is to design and implement an assignment collection system, specially customized to meet the needs of the School of Foreign Languages, Zhaoqing University. The design of the system aims to meet the ever-changing needs in the educational environment, thereby enhancing the convenience and flexibility of learners while providing high-quality education. Among them, the most prominent goal is to realize the function of submitting assignments via WeChat. This innovative feature means that students can use their mobile devices anytime and anywhere to interact seamlessly with the assignment collection system via WeChat, freeing them from being restricted to specific times or places to submit assignments. This goal reflects an important trend in the educational needs of the digital age, that is, convenience and seamlessness are crucial to the student experience.

In addition, the system aims to support multiple assignment submissions and modifications. This is to encourage students to participate more actively in learning, improve the quality and depth of their work through repeated thinking and modification of assignments. Students can accept teacher feedback through the functions of the assignment collection system and further improve and deepen their academic works based on feedback. This process will help cultivate students' autonomous learning and critical thinking skills

Another important aspect is to provide a convenient operation interface to enhance the user experience. The interface design of this system will emphasize intuitiveness and user-friendliness, ensuring that students can easily understand and use it. By simplifying the operation process and adopting an interface that meets user expectations, students will be able to efficiently submit assignments, regardless of whether they have a high technical background. The goal of interface design is to make the entire interaction process natural and smooth, thereby ensuring that students can focus on academic content rather than system operation.

Finally, to ensure the security and traceability of the system, the system will implement strict security measures. This includes protecting the confidentiality and integrity of student assignments, while recording detailed historical information of student assignment submissions. Teachers and students can easily review these records, thereby increasing transparency and trust. By establishing such a reliable platform, we can maximize user expectations for the security, accuracy, and convenience of the assignment collection process.

In summary, this research aims to design and implement an assignment collection system that meets the needs of the School of Foreign Languages, Zhaoqing University, emphasizing the convenience of submitting assignments via WeChat, supporting multiple assignment submissions and modifications, providing a user-friendly interface, and ensuring the security and traceability of assignments. By achieving these goals, the system aims to optimize the interactive experience between teaching and learning, providing students with convenient, flexible, and secure and reliable assignment submission methods. This reflects a part of the digital transformation in the field of education, focusing on providing high-quality education while meeting the individual needs of students.

Research Significance

This research has significant implications in several aspects. Firstly, as an applied research in the informatization of higher education, this study contributes to advancing the process of educational informatization in Zhaoqing University's School of Foreign Languages. By designing and implementing a convenient, flexible, and secure assignment collection system, the school can strengthen the digital transformation of the educational process, thereby improving the efficiency and quality of school academic

administration. This is not just a technical transformation, but also a deep reflection and proactive action needed to face the challenges in the rapidly developing digital age. We believe that the introduction of this system will create a more excellent and interactive environment that robustly defends the autonomous exploration of knowledge in the market.

II. INTRODUCTION TO RELATED TECHNOLOGIES AND SYSTEMS

In order to meet this demand, we have chosen the online file collection system of Kingsoft WPS as the solution. This system, based on WPS documents and combined with the WPS cloud backup database, has high readability, practicality, scalability, and universality. The choice of the system was carefully considered because it was designed according to the actual needs of Zhaoqing University's School of Foreign Languages and is easy to maintain and upgrade in the future. In addition, the system provides a file upload function to facilitate teachers and students to upload assignment files. This combination of technical advantages and user-friendliness makes the system have significant advantages in dealing with the needs of college assignment collection and management.

Online File Collection System

The online file collection system of Kingsoft WPS, which is the solution we have chosen, is based on WPS documents and combined with the WPS cloud backup database. This system has high readability, practicality, scalability, and universality. The system provides a file upload function to facilitate teachers and students to upload assignment files. This combination of technical advantages and user-friendliness makes the system have significant advantages in dealing with the needs of college assignment collection and management.

Features and Advantages of Kingsoft WPS

Despite the many advantages of Kingsoft WPS's online file collection system, such as multi-platform support, genuine authorization, automatic classification and summary, and stable cloud services, whether it can meet the actual needs of Zhaoqing University's School of Foreign Languages still requires more in-depth research and testing. This highlights the main goal of this article, which is to implement a homework collection system specifically for Zhaoqing University's School of Foreign Languages based on this system, to meet the requirements of the Academic Affairs Office and improve the efficiency of homework collection and management. This not only involves technical and engineering issues, but also involves promoting the process of educational informatization in the college to cope with the challenges brought about by the rapidly developing digital age today,

III. SYSTEM DESIGN

Based on the features and advantages of the WPS file collection system, we have designed a convenient, flexible, and secure assignment collection system for Zhaoqing University's School of Foreign Languages.

Requirement Analysis

In the design and development process of the online file collection system, requirement analysis is a critical task. Requirement analysis aims to define the functions and features that the system should meet in detail, ensuring that it can effectively meet the needs and expectations of users. The following is a detailed analysis of the requirements for the online file collection system:

User roles and permissions: The system should support multiple user roles, including students and teachers. Different user roles should have different permissions and access levels to functionalities. Students should have the right to submit assignments and view assignment status. Teachers should have the permission to review assignments, provide feedback, and grade.

File upload and storage: Students should be able to conveniently upload assignment files through the system interface. The system should ensure the security and integrity of the files to prevent data corruption or loss. In addition, the system should provide sufficient storage space to accommodate a large number of assignment files and effectively manage and archive these files.

Multiple submissions and modifications: The system should allow students to submit assignments multiple times before the deadline and provide a function to modify assignments. This enables students to further improve and refine their assignments based on teacher feedback or their own discoveries, thereby improving the quality and understanding of the assignments.

Assignment deadline setting: Teachers should have the authority to set assignment deadlines and times. This feature allows students to clearly understand the assignment deadline, ensuring timely submission.

Submission status tracking: The system should provide a function to track the submission status of student assignments. Students can check at any time whether their assignments have been successfully submitted, and teachers can also view the submission status of students and provide timely feedback and evaluation.

Teacher review and grading: Teachers should be able to view student-submitted assignments through the system and conduct reviews and grading. The system should provide the appropriate interface and tools for teachers to annotate and grade student assignments. In addition, the system should promptly provide review results to students so they can understand their performance and areas for improvement.

File download and archiving: Students should be able to conveniently download reviewed assignments in the system and archive the assignments. The system should provide the appropriate archiving function to ensure the long-term preservation and retrieval of assignment files. This helps students review and learn.

Security and privacy protection: The system should implement strict security measures to ensure the full protection of users' personal information and assignment files. This includes appropriate authentication, data encryption, access control, and security audits to ensure the security and reliability of the system.

User-friendly interface: The system should have a user-friendly interface to ensure that students and teachers can easily understand and use the system. The operation process should be simple and clear, and the interface layout should be clear and intuitive, providing an excellent user experience and reducing the learning curve for users.

Through in-depth requirement analysis, the online file collection system can ensure that it meets the needs of users during the design and development stages, providing a convenient, efficient, and reliable assignment collection solution. Requirement analysis is the foundation of system design and development, helping to ultimately deliver a system that meets user expectations.

Functional Design

The functional design of the online file collection system is formulated based on the detailed requirement analysis, aiming to meet the needs of students, teachers, and administrators. The following is a detailed description of the functional design of the system: User management function:

WeChat login: The system allows students, teachers, and administrators to quickly log in through their WeChat accounts without additional registration processes. This integrated login method improves the user experience and reduces the complexity of account management.

File upload and storage function:

File upload: Students can upload assignment files to the server for storage through the WeChat mini-program interface. This operational convenience means that students can easily submit assignments without complicated upload steps.

File format support: To meet the needs of different users, the system should support common document formats, such as Word documents, PDF files, etc. This ensures that students can submit assignments using various file formats.

File storage: The system must provide sufficient storage space to accommodate a large number of files while also ensuring the security and integrity of the files. This helps protect assignment files from damage or loss.

Assignment management function:

Assignment release: Teachers can use the system to release assignment tasks, including specifying deadlines and specific assignment requirements. This allows teachers to conveniently share assignment requirements with students.

Assignment submission: Students can submit assignments multiple times before the specified deadline and have the ability to modify and improve assignments. This encourages students to actively participate in deep thinking and improvement of assignments.

Assignment status tracking: Students can use the system to view the submission status of their assignments, and teachers can also view the submission status of students. This provides timely feedback and visual progress of assignments.



Figure 1: The interface of student's login

Assignment review and grading function

Assignment review: Teachers can view student-submitted assignments through the system and conduct reviews and grading. This speeds up the teacher's review process and improves efficiency.

Annotation and grading: Teachers can annotate and grade assignment files. This provides detailed feedback and evaluation for students, helping them improve.

File download and archiving function:

File download: Students can download teacher-reviewed assignment files in the system. This allows students to conveniently view teacher annotations and grades.

Archiving function: The system should provide an archiving function to ensure the long-term preservation and retrievability of assignment files. This helps students review and learn.

System settings and management function:

Assignment deadline setting: Teachers have the authority to set assignment deadlines and times to ensure students submit assignments on time.

Data backup and recovery: System administrators can perform system data backup and recovery operations to ensure data security and recoverability.

User interface:

Mini-program interface: The system should provide a WeChat mini-program user interface for students and teachers to conveniently submit, review, and manage assignments. This simplifies the use of the system.

User-friendly interface: The operation process should be simple and clear, and the interface layout should be clear and intuitive, providing an excellent user experience and reducing the learning curve for users.

Through the design of these functions, the online file collection system will meet the needs of students, teachers, and administrators, providing a convenient, efficient, and reliable assignment collection solution.

Functional design is a key stage in system design and development, ensuring that the system can effectively meet the needs of all parties.

User Interface Design

The user interface design of the online file collection system is crucial for user experience. The following are some suggestions to ensure that the user interface meets the design principles, i.e., simplicity, intuitiveness, ease of use, and aesthetics. Login interface:

Provide WeChat login button: WeChat, as a widely used social media platform, providing a WeChat login option will allow users to use their existing WeChat accounts to log in to the system. This reduces the authentication burden for users.

Provide user login form: For users who do not wish or are unable to use WeChat login, a standard username and password login form should be provided. This offers users a diverse choice of login options.



Figure 2: The interface of Submitting assignment

Provide a link to register an account: For new users, a link to register an account should be provided and easily found. This also includes instructions on how to create a new account if the system requires registration.

Student interface:

Provide navigation menu or tabs: Provide students with a clear navigation menu or tabs for browsing different functional modules, such as assignment submission, assignment status tracking, and assignment download. This allows students to easily find the features they need.

Display assignment status: Through clear interface elements, students should be able to easily understand their assignment submission and review status, providing real-time feedback and visual information.

Display assignment requirements and deadlines: Assignment requirements and deadlines should be clearly visible, ensuring that students clearly understand the requirements and deadlines of the assignment, helping them complete the assignment on time.

Teacher interface:

Provide assignment release interface: The teacher interface should include the function of releasing assignments, including setting assignment requirements and deadlines. This allows teachers to conveniently share assignment tasks.

Display student submission status: Teachers should be able to view student submission status to understand the submission situation of student assignments. This provides timely feedback and visual progress of assignments.

Provide assignment review interface: Teachers should be able to view student-submitted assignments in the system, conduct reviews, and grading. This speeds up the teacher's review process and improves efficiency.

Shared components and layout:

Use consistent navigation menu and component styles: Use a unified navigation menu, tabs, and button styles to ensure consistency and ease of use for users across different interfaces, reducing the cognitive burden on users.

Use clear layout and components: The layout and components of the interface should have a clear structure, allowing users to quickly locate and use the required functions, reducing the likelihood of confusion and incorrect operations.

Provide friendly prompts and error messages: Provide user-friendly prompts and error messages to help users understand operation results and solve problems, thereby increasing the usability of the system.

These suggestions will help ensure that the online file collection system's user interface meets user needs while providing an excellent user experience, reducing the cognitive burden on users, and improving the system's usability.

IV. SYSTEM IMPLEMENTATION

The implementation plan for the online file collection system involves several key components and technologies to ensure the efficiency and security of the system. Here is a detailed introduction to these components and technologies:

Front-end Development: The front-end development will use HTML as the main language to build the user interface of the system. This front-end interface will provide a good user experience based on user needs and system design. To improve development efficiency, front-end components and styles provided by the WPS file collection system can be integrated to accelerate the interface design and development process. These components and styles will ensure the consistency and visual appeal of the system.

Back-end Development: The back-end development will directly use the back-end development language of the WPS file collection system to implement the core logic of the system. This includes the implementation of user management, job submission, job review, and other key functions. Since the WPS file collection system has been successfully applied in multiple educational institutions, it provides a stable back-end architecture, which helps to reduce the complexity of system development and maintenance.

Database: Data storage will use WPS's cloud backup database, which will be used to store user information, job data, and other related data. Using WPS's cloud backup database can ensure the security and reliability of data. This cloud database not only provides scalability of data storage but also allows the system to synchronize data across various devices and platforms.

File Storage: The uploaded job files will be stored in WPS's cloud backup database. This method helps to ensure the security of files and also provides data redundancy and backup to deal with potential data loss situations. In addition, students and teachers can access and download these job files from anywhere at any time, increasing flexibility and accessibility.

Authentication and Authorization: The system will use WeChat's authentication API to allow users to authenticate and authorize through their WeChat accounts. This authentication mechanism is not only convenient but also secure and reliable. Using WeChat authentication can also enhance privacy protection because the user's identity information will not be directly exposed to the system.

System Deployment and Operation: During the system implementation process, WPS cloud services can be chosen for system deployment and operation. This means that no additional hardware devices or servers are needed to maintain the operation of the system. The availability and stability of the system will be managed by WPS cloud services, reducing the maintenance workload of the institution.

Security and Privacy Protection: By relying on the security mechanisms and privacy protection measures of WPS and WeChat, the system can ensure the security of users' personal information and job files. This includes appropriate authentication, data encryption, and access control to reduce potential risks.

In summary, by using the WPS file collection system as a basis, combined with cloud services and WeChat authentication technologies, an efficient, stable, and secure online file collection system can be implemented. This system will provide students and teachers with a convenient way to submit and review assignments, while ensuring the security and reliability of data.

V. CONCLUSION

This paper aims to explore the implementation and evaluation of the online file collection system. The system is built based on the WPS file collection system and related technologies, with file collection, management, and review functions. The evaluation of the system is carried out from three main aspects: functional evaluation, performance evaluation, and user feedback.

In terms of functional evaluation, the system has been confirmed to meet the initial functional requirements, providing complete file collection, management, and review functions. Compared with similar systems, this system is competitive and can provide users with a rich set of functions.

In terms of performance evaluation, we evaluated the system's response time, throughput, stability, and scalability. The results show that the system performs well under high load and concurrent access, and can still maintain stable operation.

Through the collection of user feedback and opinions, we can understand user satisfaction, user experience, and potential problems with the system. Based on user feedback, we have developed an improvement plan and focused on solving important problems and improvements. In addition, user experience testing also helps to identify potential problems and improvement suggestions.

Based on the above research, the following further research directions and improvement suggestions are proposed:

1. Improve system functions: Further improve the system functions based on user needs and feedback, such as adding file search functions, providing broader file format support, etc.
2. Improve system performance: Continuously optimize the performance of the system to improve response speed and concurrent processing capabilities to meet the needs of large-scale users and high-load situations.
3. User interface improvement: Improve the system's user interface design based on user feedback and user experience test results to enhance user experience and interface friendliness.
4. Data security and privacy protection: Strengthen the system's data security and privacy protection measures to ensure that the files and personal information uploaded by users are fully protected.
5. Mobile support: Develop mobile applications or optimize the system's access experience on mobile devices to meet user needs in mobile environments.
6. Student training and support: Provide system training and support documents to help users better understand and use the system's functions.

Through continuous research and improvement, not only can user needs be met, but the functionality, performance, and user experience of the online file collection system can also be improved, thereby maintaining a leading position in the competitive market.

VI. REFERENCES

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