

Construction of Online Teaching System for Finance Major Under the Background of Internet +

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Abstract: This article explores the construction of an online teaching system for finance majors in the context of "Internet Plus." The content includes system design, resource development, positioning of teacher and student roles, modes of teaching interaction, system development, and application evaluation. Through detailed analysis and assessment, the effectiveness and value of the online teaching system in the education of finance majors are demonstrated.

Keywords: Finance; Internet Plus; Online teaching system; System design.

1 Introduction

With the rapid development of internet technology, the traditional face-to-face teaching model is gradually shifting towards online education. In recent years, many colleges and universities have offered a large number of open online courses and MOOCs in finance to meet the needs of learners^[1]. However, these online courses are mostly recorded videos lacking teaching interaction and in-depth discussion, resulting in uneven learning outcomes. How to build an efficient, professional online finance teaching system with strong interactivity under the "Internet Plus" background, which retains the advantages of face-to-face teaching while utilizing the convenience of online teaching, has become an urgent issue for traditional universities to address^[2]. This paper aims to explore how to design and build such a system, and evaluate its actual effectiveness in finance teaching through empirical analysis^[3].

2 System design

2.1 Functional design

The functionalities of the online teaching system include user management (such as registration, login, profile completion, and permission management), course management (such as course uploading, publishing, browsing, and enrollment), teaching resource uploading (such as presentations, exercise libraries, and videos), and interactive communication (such as real-time audio/video and Q&A discussion areas)^[4]. The system takes into account the needs of all aspects, aiming to provide an efficient online teaching experience. The details are shown in Figure 1:

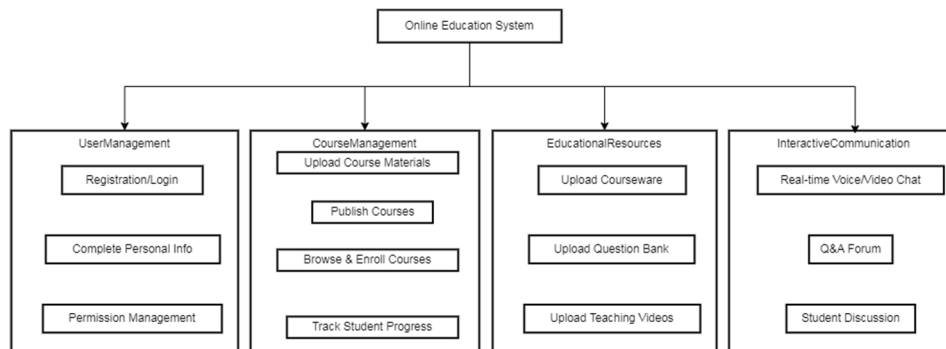


Figure 1 Functional design diagram

2.2 Resource development

The video resources of the online teaching system should focus on the systematicness and logic of the knowledge system. The case library resources should focus on typical cases in various professional fields of finance to train students' practical application abilities^[5]. Fully-functional professional simulation software should be selected for both teacher demonstrations and student self-learning. The resource contents should balance knowledge learning and practical application, and adopt diverse forms of construction to enrich teaching methods and improve teaching effectiveness^[6].

2.3 Positioning of Teacher and Student Roles

In online teaching, teachers should not only systematically impart professional knowledge through various online forms, but also track and guide student learning in a timely manner, answer questions, and organize exchange activities to promote teacher-student interaction^[7]. Students should not only maintain learning initiative and complete assigned tasks, but also make use of online resources to conduct extended learning and develop analytical and problem-solving abilities^[8].

2.4 Interactive teaching methods

Video teaching can set knowledge check points for testing, and understand students' comprehension through their audio/video feedback. Forums can organize thematic Q&A discussions where teachers participate and guide students to think deeply. Real-time Q&A enables one-on-one or multi-party exchange through video chat for teachers to respond to questions instantly^[9]. By leveraging video, forums, real-time Q&A and other online interaction methods, online teaching can achieve synchronous interaction like face-to-face teaching to promote active learning, in-depth thinking and improve effectiveness.

2.5 Assessment methods

Exam assessment can set various question types for auto-grading to improve efficiency and should cover all knowledge points. Assignment assessment may require case analysis, report writing, etc. Teachers' scoring should have clear criteria. Assignment design should emphasize knowledge application. Project assessment can form team projects and evaluate report quality

and team collaboration abilities^[10]. Various assessment methods should align with course content to comprehensively evaluate students' knowledge mastery and capabilities.

3 System development

3.1 Technical framework design

The online teaching system adopts a microservices architecture to ensure stability and modular upgrades. It utilizes a distributed relational database for efficient data processing and security. The system integrates big data analysis tools, supporting in-depth research on financial data. The front end employs responsive design, adaptable to various devices, and incorporates real-time communication to enhance interaction between teachers and students. The video functionality benefits from efficient encoding and CDN acceleration, while system encryption and identity verification safeguard user privacy and data security. The specific technical framework is illustrated in Figure 2.

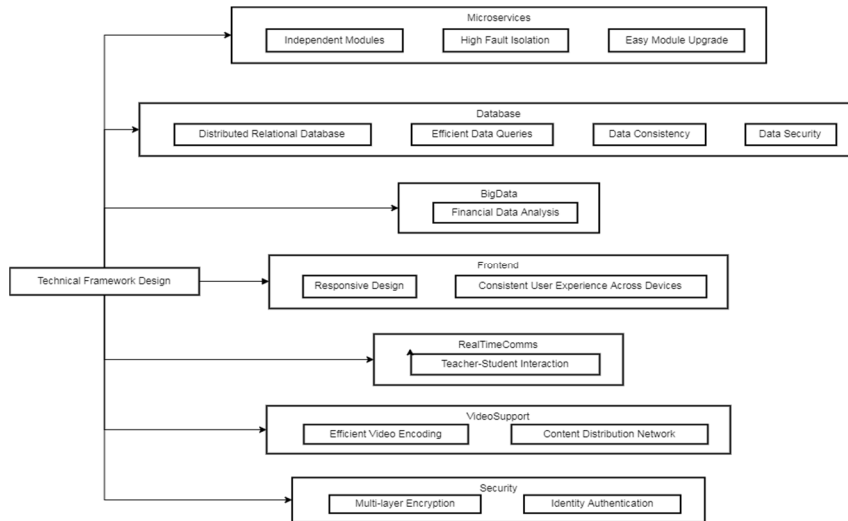


Figure 2 Technical framework design drawing

3.2 Interface design

The interface design of the online teaching system is a primary consideration for user experience. Therefore, a modular layout has been adopted to ensure that each functional section is clear and easily accessible. On the homepage, course recommendations, the latest news, and student interaction areas are all clearly visible, meeting users' intuitive operating habits. In terms of color selection, a combination of dark blue and gold has been used, representing the professionalism of finance studies while echoing the modernity of the internet. Considering access from various devices, the system interface supports responsive design, maintaining the integrity of content and harmony of layout whether on desktop, tablet, or mobile. Essential functions like search and notifications are prominently placed, ensuring that users can quickly and efficiently access information.

3.3 Resource Development and Production

Resources are the core of the online teaching system. To ensure high-quality educational content, a standardized resource production process has been adopted. In-depth organization of core knowledge and the latest research in finance has been conducted, ensuring the authority and cutting-edge nature of the content. Through a professional media team, this knowledge is transformed into high-definition videos, illustrated tutorials, and interactive exercises. To enhance the learning experience, software tools simulating financial operations have also been included, helping students apply what they have learned in practical scenarios. All resources undergo strict quality checks to ensure their educational value to students. Details are shown in Figure 3.

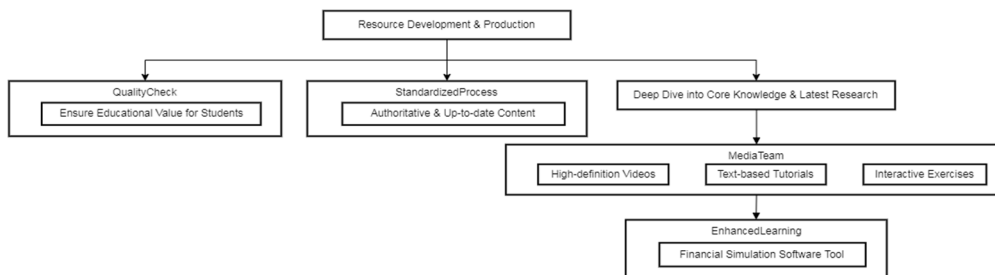


Figure 3 Resource development and production diagram

3.4 Development of Functional Modules

In development, key modules were designed based on the teaching needs of finance and students' usage habits, including course browsing and enrollment, interactive communication, learning tracking, testing and assessment, etc., to ensure stable and easy-to-use modules. All modules have gone through rigorous development and testing to strengthen teacher-student communication and enable students to timely understand their learning status and mastery level. The specific functional module development is shown in Figure 4.

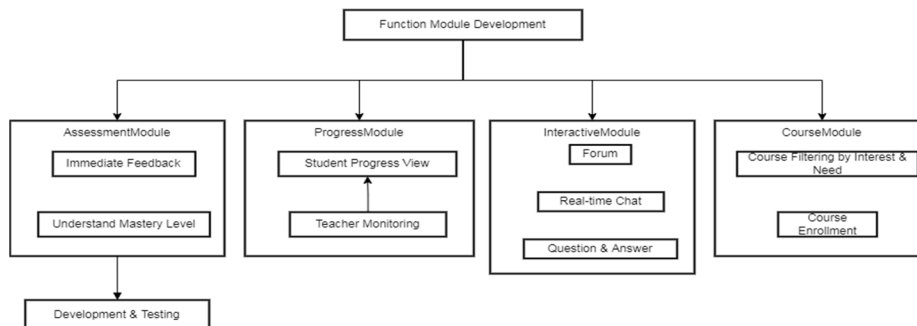


Figure 4 Functional module development diagram

3.5 Testing and Optimization

After the development of the functional modules, comprehensive testing was conducted, including unit testing, integration testing, and user acceptance testing, to ensure the system is

free of significant defects. In a real-world environment, financial experts and target users were invited to participate in beta testing, providing their feedback. Based on these suggestions, necessary optimizations were made, such as improving loading speeds, simplifying operational processes, and enhancing interactive design. After each optimization, tests were conducted again to ensure the best results were achieved.

4 Application evaluation

4.1 Evaluation metrics

The success of an online teaching system depends not only on its features and design but also requires assessment based on actual outcomes. The primary evaluation metrics set are: User Activity: Measuring the level of activity of students and teachers within the system, such as the number of daily logins; Course Completion Rate: The proportion of students completing the courses, reflecting the courses' appeal and practicality; Interaction Frequency: The number of communications between students and teachers or other students, indicating the system's interactivity; System Response Speed: The time from user click to system response, critical for user experience; User Satisfaction: The percentage of user satisfaction obtained through survey questionnaires. The details are shown in Table 1.

Table 1 Evaluation index table

Evaluation index	Data description
User activity	Average daily logins: 4.2
Course completion rate	75%
Interaction frequency	Average interactions per day: 6.5
System response speed	Average response time: 0.8s
User satisfaction	Percentage satisfaction: 92%

These metrics provide a comprehensive view of the actual performance of the system and user satisfaction, allowing for further optimization.

4.2 User survey

To gain deeper insights into user feedback and suggestions for the online teaching system, a usage survey was conducted. The survey primarily assessed aspects such as system usability, content quality, and interactive experience. The participants in the survey included 500 students and 50 teachers. Table 2 presents the main results of the survey:

Table 2: Survey of Usage Situation

Investigation content	Student satisfaction (%)	Teacher satisfaction (%)
System usability	88%	90%
Content satisfaction	90%	92%
Interactive experience	85%	86%
Technical support	80%	82%

It can be seen from the survey results that the overall satisfaction of students and teachers with the system is relatively high, especially the satisfaction with the content. However, in terms of

technical support, there is still room for improvement, which provides an important reference direction for subsequent optimization.

4.3 Performance evaluation

For an online teaching system, the ultimate outcomes are the learning results of the students and the teaching effectiveness of the instructors. To assess the actual impact of the system, a detailed analysis was conducted on students' examination scores, participation in courses, and feedback on teaching from instructors. Table 3 presents the primary data for performance evaluation:

Table 3: Performance Evaluation Table

Evaluation content	data
Student test scores (before use)	Average score: 78
Student test scores (after use)	Average score: 85
Course participation	Completion rate: 83%
Teacher feedback	Satisfaction: 89%

The data indicates a significant improvement in students' exam scores after using the online teaching system. Additionally, there is a relatively high level of engagement in the courses, suggesting that students are interested in the course content and actively participating. Teachers' satisfaction with the system has also reached a high level, indicating that the system indeed provides effective support for teaching. These evaluation results prove the effectiveness and value of the online teaching system in the instruction of finance majors.

5 Conclusion and prospects

Online teaching systems have become an essential tool in financial education. Through the design, development, and evaluation of the system, this study has demonstrated its value in enhancing student learning outcomes and meeting the instructional needs of teachers. In the future, with further technological advancements, such systems will find extensive application across a broader range of subjects and fields.

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