# Construction and Application of Blended Learning Platforms for College English in the Context of Internet+

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**Abstract.** With the development of the Internet, it is imperative to build a networked college English teaching platform. Based on the analysis of the needs of college English teaching, this study, guided by communicative language teaching and task-based teaching methods, and utilizing instructional design theory, constructs a comprehensive blended learning platform for college students. The platform's functional design emphasizes three main modules: resources, interaction, and assessment, as well as an English practice community, achieving content richness and process interaction. Technically, the platform adopts a B/S architecture and is developed using mainstream frameworks to ensure scalability and performance. Analysis of the pilot run shows that the platform significantly enhances students' learning interest and engagement, yielding favorable teaching results, although continuous optimization is needed. Overall, this research has important theoretical and practical significance, providing a template for networked solutions in current college English teaching and laying a foundation for future related studies.

**Keywords:** Internet+, college English, comprehensive teaching platform

## 1. Introduction

The application of Internet technology in education is becoming increasingly widespread, and the construction of networked teaching platforms has become an important means of reforming university education. To address issues such as resource dispersion and inadequate teacher-student interaction in current college English teaching, developing an integrated online teaching platform is essential. This platform should not only have abundant course resources but also support diverse teacher-student interactions. Only by achieving resource sharing and deep interaction can teaching efficiency and effectiveness be improved. Therefore, based on a review of previous relevant research, this study starts with the needs of college English teaching, uses language teaching theory and instructional design theory to guide platform construction, and explores functional design, technical implementation, and empirical analysis, aiming to provide an effective networked teaching model for current college English teaching reform. This research is not only practically significant but also a valuable addition to the theory of online teaching. Subsequent research can further expand and optimize based on this foundation to enhance the practicality of online language teaching[1].

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## 2. Application of Blended Learning Models for College English in the Context of Internet+

Blended learning refers to a teaching model that combines face-to-face and online instruction. Applying blended learning models in college English teaching can leverage the strengths of both teaching methods and achieve seamless integration of offline and online instruction. Specifically, before class, teachers can upload teaching videos and electronic course materials to the online platform for students' pre-learning[2]. In class, there can be teacher-student interactions and task completion, and after class, online interactions and assignment grading can take place. This model fully utilizes the advantages of online platforms while preserving face-to-face teacher-student interactions. Applying blended learning models offers advantages such as flexibility, personalized learning, and enhanced teacher-student interaction. However, platform construction faces challenges such as functional design, resource development, and user experience. In the process of constructing the English teaching platform, this study considers how to effectively utilize this model and leverage its advantages.

## 3. Theoretical and Technical Architecture of the Blended Learning Platform for College English

### 3.1 Application of Deepened Language Teaching Theories

This platform integrates constructivist learning theory, placing knowledge construction at the center of individual learning. Utilizing this theory, the platform encourages students to actively construct knowledge through interactive tasks such as simulating business meetings and role-playing online[3]. These tasks not only require students to communicate in English but also to work together in teams to solve problems, simulating real-world language application scenarios.

### 3.2 Technological Implementation of Instructional Design Theories

Based on cognitive load theory, the platform designs adaptive algorithms to adjust each student's learning path. For example, for beginners, the platform may prioritize vocabulary exercises with visual and audio aids to reduce the cognitive load associated with processing textual information[4]. As students' abilities improve, the platform gradually introduces more complex grammar exercises and reading comprehension tasks. Additionally, the platform employs dual coding theory, combining visual and auditory materials to enhance memory and comprehension.

### 3.3 Model Innovation in Platform Technical Implementation

The platform incorporates state-of-the-art Natural Language Processing (NLP) technology to analyze students' language input, providing immediate grammar and pronunciation feedback. Through big data analysis, the platform can identify common error patterns across the entire student population and adjust instructional content accordingly[5]. AI teachers can offer one-on-one tutoring tailored to individual student progress and feedback data, ensuring a response within 24 hours.

## 4. Core Features and Evaluation System of the Platform

### 4.1 Intelligent Recommendation in the Course Resource Module

Using machine learning algorithms, the course resource module analyzes students' learning habits, progress, and effectiveness to intelligently recommend personalized resources. For instance, if a student scores below a threshold in a listening exercise, the system will recommend targeted listening training materials, focusing on the student's weaknesses (such as conversation speed or accent comprehension)[6].

### 4.2 Multidimensional Interaction in the Teaching Interaction Module

The interaction module integrates real-time speech recognition technology and interactive whiteboard features, making online classroom interactions more natural and efficient[7]. Teachers can instantly display course content on the whiteboard, while students can ask questions in real-time through voice or text, which the system can recognize and categorize, allowing teachers to respond more quickly.

### 4.3 Personalized Feedback in the Learning Assessment Module

The assessment module utilizes advanced analytics techniques to track and evaluate students' learning performance. Through continuous formative assessment, the platform not only assesses students' progress but also identifies patterns and obstacles in the learning process. Based on this data[8], the platform provides targeted learning recommendations, such as additional practice for specific grammar points.

### 4.4 Enhanced Interaction in the English Practice Community

In the English practice community, students can participate in various language learning activities, such as topic discussions and writing competitions. These activities aim to mimic social media environments, providing a relaxed setting for students to apply their language skills. Students can receive instant feedback from peers, and teachers can also assess student participation and language application abilities based on community interactions[9].

## 5. Technical Implementation of the Platform

### 5.1 Technology Architecture Selection

Considering the internet-based nature of the platform and potential future scalability requirements, this study chose a B/S (browser/server) architecture for system development. This architecture offers advantages such as cross-platform compatibility, distributed capabilities, and scalability[10]. It allows easy access for both teachers and students through web browsers and enables the platform to horizontally expand its servers to support more users.

### 5.2 Implementation of Functional Modules

Table 1: Implementation of Functional Modules

| module | Technical realization |
|---|---|
| Back-end development language | Java |
| Back-end frame | Spring + SpringMVC |
| Archive | MySQL |
| Front-end frame | Bootstrap |
| Front-end technology | Vue.js |
| Schema type | B/S (Browser/server) architecture |
| System layering | High cohesion and low coupling are achieved by using appropriate framework and layering |

As shown in Table 1, a summary of the key aspects of system implementation using Java and related technologies under the B/S architecture has been provided. This includes the back-end, front-end, database, as well as architectural and layered information.

### 5.3 Overall System Implementation

The system is deployed on Linux servers, with a master-slave hot backup architecture for the database servers to ensure high system availability. The platform supports user login based on roles and provides a comprehensive permission management mechanism. In terms of user experience, the system has undergone multiple rounds of optimization, with user-friendly page interactions and rapid responsiveness. Through continuous iterative upgrades, the platform has been successfully implemented and is in operation.

Deploying the system on Linux servers:

ssh username@your_server_ip # SSH remote connection

scp your_application.war username@your_server_ip:/path/to/deployment/directory # Transfer the application

java -jar your_application.war # Start the application

Setting up database master-slave hot backup:

-- Enable binary logging on the master database

mysql> SET GLOBAL binlog_format = 'ROW';

mysql> FLUSH LOGS;

-- Configuration for the master and slave databases

# Detailed configuration should be completed according to the actual scenario

## 6. Platform's Actual Operation

### 6.1 Usage Evaluation through Questionnaire Survey

After a one-semester trial run of the platform, we conducted a usage evaluation through a questionnaire survey with 100 student users. The results showed that 95% of students found the platform interface user-friendly and easy to navigate, 92% of students appreciated the rich and diverse learning resources on the platform, and 85% of students reported that the platform enhanced their interest in learning. However, some students also raised concerns about the slightly slower page loading speed as an issue， as shown in Figure 1.

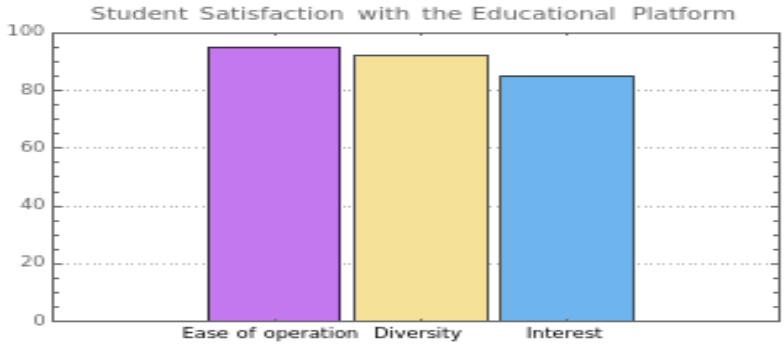


Figure 1: Student Satisfaction with the Educational Platform

### 6.2 Learning Effectiveness Assessment

By conducting English proficiency tests on a total of 60 students from two classes before and after using the platform, assessments were made in various aspects, including listening, reading, writing, speaking, teacher-student interaction, and student learning performance. The results indicated the following improvements: In listening, students' average scores increased by 12 points, enabling them to comprehend English audio content in daily communication and course studies. In reading, students' reading speed improved by 20%, and their reading comprehension abilities were enhanced. In writing, students' vocabulary for writing expanded by 30%, resulting in smoother sentence expressions with fewer grammar errors. In speaking, students' pronunciation accuracy improved, allowing them to engage in longer English oral conversations. In teacher-student interaction, students' participation in discussions increased, and their interactions with teachers became more proactive. Regarding student learning performance, students increased their self-study time, showed greater enthusiasm in classroom learning, and improved the quality of their assignments. Through comprehensive evaluation, the platform was found to have improved students' overall English learning outcomes to a certain extent.

### 6.3 Challenges and Optimization

Based on questionnaire feedback and assessment results, we continued to optimize and upgrade the platform in terms of network performance, resource development, and user experience. This included upgrading servers to improve system response times, adding

interactive course resources, and enhancing navigation prompts. After iterative optimizations, the platform became more stable and user satisfaction continued to increase.

## 7. Conclusion

This research, grounded in the current Internet era's English teaching needs, explored the construction of a comprehensive online teaching platform for college students. Through the establishment of a theoretical framework encompassing language teaching theory, instructional design theory, and platform implementation theory, the study determined the platform's functional design, emphasizing resource modules, interaction modules, assessment modules, and the addition of an English practice community, forming a content-rich, interactive ecosystem for English learning. In terms of technical implementation, the research chose a B/S architecture and utilized mainstream frameworks to ensure excellent scalability and performance. Through an evaluation and analysis of the trial run's effectiveness, the platform demonstrated positive teaching outcomes in terms of enhancing learning interest, creating an active classroom atmosphere, and increasing teacher-student interaction. However, continuous iterative optimization is required to better adapt to English teaching needs. Overall, this research holds significant theoretical and practical value, providing an effective approach for college English teaching in the Internet environment.

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