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Original Paper

Research on the Application of Blended Teaching Mode Based on Smart Classroom Teaching Platform

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Abstract

This study aims to explore how smart classroom teaching platforms can deeply support the construction and application of blended learning models for English in universities. The dynamic data and interactive environment provided by smart classrooms can effectively integrate online independent exploration and offline collaboration, thereby reshaping the English teaching ecosystem. The research conclusion shows that the platform based hybrid mode not only optimizes the teaching process, but also demonstrates unique value in language practice, personalized learning paths, and process evaluation, providing an operational framework for improving the effectiveness of English teaching in universities.

Keywords

Smart Classroom Teaching Platform, Blended Learning Model, College English, Teaching Model Construction

1. Introduction

Teaching English at the college level is under increasing pressure to develop students' ability to utilize their language skills and communicate across cultures. The traditional methods utilized by instructors have limitations with regard to meeting personalized, interactive, and individual student learning goals, and the use of technology has provided a way to innovate how instruction can be delivered. The introduction of smart classroom teaching provides opportunities for instructors to utilize technology in ways that allow them to access quality resources, develop meaningful opportunities for students to engage, and monitor their progress. As such, an important consideration for how SCT can be utilized for English teaching is whether or not to create a blended learning model that meets the needs of both teachers and students, and excitedly advance the curriculum.

2. Core Concepts and Theoretical Foundations

2.1 The Essence and Functions of Smart Classroom Teaching Platforms

The smart classroom teaching platform is a digital auxiliary tool that adapts to the daily teaching scenarios of universities. It is not a complex technical system, and its core connotation is to integrate teaching resources, connect various teaching links, and meet the actual needs of teachers' lesson preparation and students' autonomous learning. The platform allows teachers to upload courseware, assign post class exercises, and view students' learning feedback in real time, without the need for additional professional skills to operate proficiently. Students can also review classroom content, submit assignments, and supplement knowledge points that they have not mastered in class at any time through the platform. The various functional designs of the platform are in line with the real scenarios of teaching, eliminating redundant and complex settings, balancing practicality and convenience, and catering to the understanding and cognition of the general public. It is an important carrier for connecting online and offline teaching.

2.2 Core Elements of Blended Learning Models

The core elements of blended learning mode revolve around the reasonable combination of teaching scenarios, with offline teaching focusing on face-to-face deep interaction and targeted guidance. Teachers can adjust the pace of explanation in a timely manner based on students' classroom reactions and solve the questions raised by students on the spot. Online teaching relies on the smart classroom platform to complete knowledge transmission and independent practice. Students can arrange their learning time according to their own learning pace, without being limited to fixed classroom periods. These elements do not exist in isolation. Questions about offline teaching can be extended to online platforms for continuous exploration, and the results of online learning can be further consolidated in the classroom. The connection between elements is in line with the actual pace of university teaching and the general public's understanding of teaching modes, and can be implemented without complex design.

2.3 Key Pedagogical Theories Underpinning This Research

The main teaching theories supporting this study are constructivism and connectivism. Constructivism emphasizes that learning is the process in which learners actively construct knowledge meaning with the help of others in specific contexts, which is highly compatible with the scenarios of teacher-student interaction and independent exploration in blended learning (He, 2004). connectivism focuses on the connection and sharing of knowledge, providing theoretical support for the integration of resources in smart classroom platforms and the connection of online and offline knowledge (Zhang, 2025). The blended learning related theories proposed by He Kekang further clarify the core logic of the integration of online and offline teaching, and provide theoretical guidance for model construction that is in line with teaching practice (Liu, 2022). These theories are all derived from teaching practice summaries, do not require complex interpretations, are in line with the general public's cognition, and can effectively support research development.

3. Analysis of Current Blended English Instruction and Platform Applications in Higher Education

3.1 Primary Characteristics and Reform Needs in University English Teaching

College English teaching is based on the imparting of general English knowledge, and teachers often use traditional teaching methods. In the classroom, the emphasis is on grammar and vocabulary explanations, while neglecting the cultivation of students' language application abilities. Often, assignments are mainly mechanical memorization and exercise exercises, which makes it difficult to stimulate students' learning initiative. Students generally experience a sense of frustration in their English learning, as they spend a lot of time preparing for level exams but are unable to proficiently use English for daily communication and professional expressions. Some students even exhibit resistance to learning. There is a clear problem of homogenization and obsolescence in the teaching content, which mostly revolves around general topics in textbooks and is disconnected from students' professional learning and future career needs. This requires reform in English teaching in universities, breaking through existing teaching limitations and adjusting teaching directions to meet students' actual needs.

3.2 Current Application Status of Smart Classroom Platforms in English Instruction

The smart classroom platform has been widely used in English teaching in most universities, with common types such as U-Campus SPOC. However, its application has not been truly integrated into the entire teaching process. Teachers often limit their use of the platform to uploading courseware, assigning online exercises, and checking in tasks. They rarely design personalized teaching scenarios based on the core needs of English listening, speaking, reading, and writing, nor do they use the platform's learning analysis function to adjust the teaching pace. Students mostly use the platform to complete the hard tasks assigned by teachers, and rarely actively supplement their learning with the platform's listening training, oral simulation and other functions. Some students even perfunctorily complete online assignments, only pursuing submission rates without paying attention to learning effectiveness. The interactive discussion area of the platform is often idle and fails to play its due role in communication assistance.

3.3 Key Features of Contemporary Blended Learning Practices

Blended learning in college English practice still revolves around traditional classrooms as the core, with online activities often serving as auxiliary supplements to offline teaching rather than organic integration. Teachers often assign online preview tasks in advance for students to watch micro lessons and complete simple tests, while offline classrooms still focus on self teaching and rarely address students' common questions based on online preview situations. When students participate in blended learning, they are often in a passive following state. Online previews are often perfunctory to cope with teacher inspections, and offline classrooms rarely actively participate in interactive discussions based on what they have learned online. Even if teachers use platforms to record students' learning behaviors and form learning records, it is difficult to truly promote students to actively use online resources to

make up for their English shortcomings. Overall practice presents a distinct feature of offline dominance and online formalization (Biswas & Bhattacharya, 2024).

4. Construction of a Blended Teaching Model Based on Smart Classrooms

4.1 Overall Design Framework and Core Principles

As the core carrier connecting online and offline teaching, the smart classroom teaching platform is compatible with most existing teaching equipment in primary and secondary schools and is easy to operate. Teachers do not need to invest too much effort in learning new technologies to quickly apply them. Its overall design framework revolves around "platform support, teacher leadership, and student subjectivity", and the specific logic can be referred to in Figure 1. Teachers combine the key and difficult points of the textbook with the students' learning foundation, screen and push preview resources through the platform, collect preview data, conduct targeted lectures and interactive explorations based on the data during class, and use the platform to push personalized tutoring tasks and receive student feedback after class; Students can independently preview before class, participate in interactive activities during class, and provide feedback on doubts after class through the platform. The platform synchronously retains learning traces and provides support for teachers to adjust teaching plans. The core concept is to abandon the formal application of technology and enable the platform to truly serve teaching and learning, achieving an organic integration of online self-directed learning and offline classroom exploration, in line with the actual teaching situation on the front line.

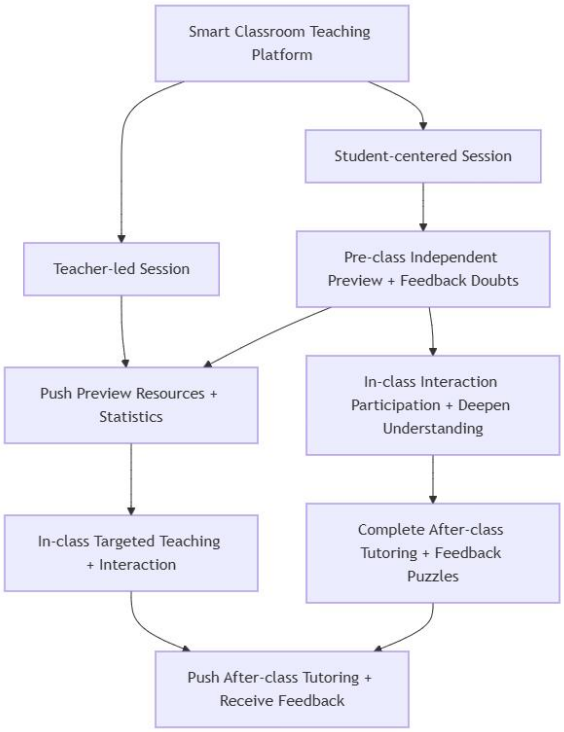

Figure 1. Overall Design Framework Diagram

4.2 Three-Phase Instructional Activity Design: Pre-Class, In-Class, and Post-Class

In the pre class stage, teachers should combine the key and difficult points of the textbook with students' past learning performance, and screen suitable micro lesson videos, knowledge point lecture notes, and simple preview detection tasks on the smart classroom teaching platform. These preview contents should not be too complex and should be in line with students' current learning level. Students can use fragmented time after class or break to independently review their learning. If they encounter any parts that they cannot understand, they should directly leave a message and ask questions on the platform. The preview detection task does not require a long time, mainly to help teachers preliminarily grasp students' understanding of basic knowledge points. The results of the preview detection task will be automatically synchronized to the teacher's end, and teachers can quickly understand students' preview situation without correcting them one by one. It is necessary to sort out the common questions of students in advance and prepare for classroom teaching.

During the in class stage, teachers should adjust the focus of classroom teaching based on the feedback from pre class preview and testing tasks. In class, teachers should not blindly explain all knowledge points, but focus on the content that students generally have questions about. During the explanation process, students can be invited to speak in conjunction with their confusion during preview. Students should actively share their understanding and questions, and teachers will further explain based on students' speeches. When encountering simple problems that require interactive exploration, students should be grouped for discussion before communication. Throughout the classroom process, teachers can use the platform to simply record students' speeches and mastery, avoid missing key questions, and timely discover content that individual students still do not understand.

In the post class stage, teachers should combine the students' mastery in the classroom and push personalized post class consolidation tasks to students through the platform. The difficulty and quantity of the tasks should be flexibly adjusted according to students' preview and classroom performance. After students complete the post class consolidation tasks, the platform will automatically present error analysis, and students can refer to the analysis to correct errors independently. If there are still questions, teachers should continue to consult with teachers on the platform. Teachers should regularly check students' post class task completion status and messages, and provide simple explanations for common errors among students. The preview testing tasks, classroom performance, and post class consolidation tasks will be interconnected to form a complete teaching loop. This design is in line with the actual needs of frontline teaching and does not involve formal teaching processes.

4.3 Platform-Supported Teacher-Student Interaction and Peer Collaboration Models

The smart classroom platform can directly build lightweight interactive scenarios, which can meet the interactive needs of daily teaching without complex operations. When students have questions, they do not need to raise their hands and wait for a response on the spot. They can submit confusion through the platform's anonymous questioning function to avoid situations where they are too shy to speak up. Teachers can choose to answer questions briefly on the spot or collect similar questions for centralized

explanation. Students can also see other students' questions and teachers' answers. When encountering the same confusion, they can refer directly without repeating the questions. Group collaboration can be achieved through the platform's grouping function. Teachers can reasonably group students according to their learning level, and arrange students with different foundations for each group. During group discussions, students can share their ideas and notes through the platform, and students with better foundations within the group can provide simple explanations for the questions of weaker students. Teachers can view the collaboration status of each group in real time, intervene and guide them in a timely manner, but do not intervene too much, so that group collaboration can truly be implemented rather than just a formality. The platform will retain traces of group collaboration, making it convenient to view the participation status of each group in the future. This interactive and collaborative mode is in line with the actual pace of primary and secondary school classrooms, simple and easy to operate, and can truly stimulate students' participation enthusiasm (Ounejjar, Lachgar, Ouhayou et al., 2024).

5. Implementation and Support Strategies for Blended Teaching in Smart Classroom Environments

5.1 Teaching Preparation Layer: Resource Development and Teacher Role Readiness

The construction of teaching resources should abandon the practice of simply moving online materials. Teachers should combine the cognitive characteristics of the students in the grade they teach and the specific content of the textbook, and independently record simple micro lessons with a duration of 5-8 minutes, accompanied by classroom practice clips and knowledge point annotations, to avoid resources being too lengthy or detached from the actual classroom. The resource review team can be composed of 3-4 teachers in the same grade to conduct a simple review of the resources submitted by teachers, focusing on checking whether the resources are suitable for teaching difficulties and whether there are errors. After passing the review, they will be uploaded to the smart classroom platform and classified for archiving, making it convenient for teachers to call and update them in the future. Teacher role preparation should focus on improving practical skills. Schools can organize regular collective discussions among teachers of the same subject, with each discussion focusing on a difficult point in the application of platform resources. Experienced teachers can share practical skills, and teachers can actively seek advice based on their own teaching shortcomings. After the discussion, they can try to optimize their resource production and platform operation methods. If they encounter difficult problems, they can communicate in the discussion group without spending time separately participating in complex training courses. Resource construction and teacher role preparation are coordinated to ensure that teaching preparation work is solid and adapted to the actual pace of frontline teaching (Yang, Zhang, Chai et al., 2023).

5.2 Teaching Process Layer: Precision Teaching and Deep Interaction

Learning situation data can be captured in real-time through the smart classroom platform, covering basic information such as students' completion of previews, classroom answering speed and accuracy,

and frequency of interactive speeches. Teachers should accurately locate students' weak knowledge points based on these data, and not blindly promote teaching progress. For common problems, they can slow down the pace of explanation and supplement simple cases. For individual students with weak foundations, targeted Q&A clips can be sent through the platform, without occupying collective time for individual tutoring in the classroom. Deep interaction can adopt an innovative approach of "layered interaction+instant feedback". Teachers can divide interactive questions into basic and improvement categories based on learning data. For basic questions, weaker students are given priority to answer, and if there are errors in their answers, prompt text can be sent through the platform to guide them to correct them on their own. For improvement questions, students can think independently and submit their ideas on the platform, and teachers can select typical ideas for centralized evaluation. Students can leave supplementary comments on the ideas of other students. Teachers do not need to lead the interaction throughout the process, but focus on guiding students to actively express themselves and communicate with each other. After the interaction is completed, the platform can quickly push simple in class exercises to test the effectiveness of the interaction, ensuring that precise teaching and deep interaction run through the entire classroom process. It is simple, easy to operate, and in line with the actual teaching situation on the front line, avoiding interaction becoming a formality and precise teaching only staying on slogans.

5.3 Teaching Evaluation Layer: Data-Driven Comprehensive Assessment

The evaluation data comes from the full process learning traces of students automatically retained by the smart classroom platform, without the need for teachers to manually collect and organize them. It covers the quality of pre study completion, classroom interaction participation, post class task correction effect, and group collaboration performance. Teachers should classify and sort out these data, eliminate invalid data, and focus on students' progress and changes rather than just their grades. The evaluation checklist can be developed by teachers based on the characteristics of the subject, divided into three dimensions: basic standards, ability improvement, and participation performance, with specific observable evaluation points set for each dimension. Students can view their own evaluation data and key feedback through the platform, clarify their strengths and weaknesses, and teachers can adjust their subsequent teaching strategies based on the common problems presented in the evaluation data. For students who show significant progress in the evaluation, personalized encouragement can be sent through the platform. For students who have shortcomings, specific improvement suggestions can be given based on the evaluation points. The evaluation results are not a one-time conclusion, but can be dynamically updated according to the students' subsequent learning performance (Bhattacharya, Biswas, Damkondwar et al., 2025). There is no need to spend too much time organizing specialized evaluation activities. It is simple and easy to operate, and can truly reflect the students' actual learning situation, adapting to the busy pace of frontline teaching.

5.4 Support and Assurance Layer: Competency Enhancement and Mechanism Improvement

Schools should abandon the old method of centralized large-scale training and establish assistance

groups composed of technical backbone and experienced teachers on campus. The assistance group is divided into subject groups to connect with each teacher, and conducts one-on-one precise assistance once a week. Teachers can organize practical difficulties encountered in daily use of the platform in advance. During the assistance, members of the assistance group will demonstrate the solution on site and guide teachers to operate proficiently. This eliminates the need for teachers to spend extra time self-learning and exploring. In response to the pain points commonly reported by teachers when using the platform, the assistance group can summarize and provide feedback to relevant departments of the school, and then the school can coordinate with the platform service provider to optimize the operation process. A complete mechanism can establish a closed-loop mechanism of "problem feedback rapid response implementation improvement". Teachers can submit platform usage or teaching implementation issues at any time through the school's teaching and research group. The assistance group and relevant departments of the school need to respond within one working day and provide specific and actionable solutions. Summarize the problem-solving situation and teacher needs once a month, dynamically adjust the focus and mechanism details of assistance, and the assistance group can also collect practical experience from teachers once a month, select practical skills, and organize them into a book to share with all teachers. Let the enhancement of abilities and the improvement of mechanisms complement each other, truly meeting the teaching needs of frontline teachers, without resorting to formal guarantees (Li, 2024).

6. Conclusion

Using the Smart Classroom platform for blended learning redefines how resources, activities, and assessments relate to one another in the context of college English instruction. By using various features of the Smart Classroom platform, students can engage in learning activities both before class and after class, while classroom time is devoted to developing higher order thinking and developing overall proficiency in the Language. In the future, more emphasis should be placed on developing teachers professionally within new technological environments and on more effectively integrating technology into their instructional practice and how they teach languages. This will ensure that the blended learning will be a viable and ongoing means to develop foreign language talent among our students.

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