

# The Application and Innovative Development of Smart Classroom to College English Teaching

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## Abstract

The core of the smart classroom teaching model is accurate learning situation analysis based on the information technology platform, effective teacher-student and student-student interactive and personalized teaching, and ultimately, students' intelligent development. The college English smart classroom makes students deeply involved in the English classroom and promotes their independent learning ability, cooperative learning ability, and communicative ability, through the teaching design of online preview before class, inquiry learning and communication during class, and reflection after class.

**Keywords:** smart classroom, college English teaching, college students

## 1. Introduction

With the in-depth development of information technology, virtual reality, cloud computing, big data and other technologies are becoming increasingly mature, and the Internet is gradually integrating with all areas of society at a deep level, forming the "Internet +" model. The deep combination of "Internet+Education" has brought opportunities for education development in the new era, making the traditional teaching mode develop into an intelligent, informative, and personalized one. The smart classroom was born as a product of the information age. It has been shown that the smart classroom integrates modern information technology into the teaching environment, forming a teacher-guided, student-orientated, and training-primarily based teaching mode, which is beneficial to the quality of college teaching (Liu, 2016, p. 51-56+73). Relevant studies have also shown that the smart classrooms have a positive influence on the development of students' independent learning ability, information technology literacy, and learning interest (Zuo, 2021, p. 213-214). However, the comprehensive promotion and effective implementation of the smart classroom in college English teaching cannot be achieved instantly, and it is necessary to combine theoretical research with the actual operation, actively and steadily promoting the gradual advancement. By analyzing the related research on smart classroom in China, we found that most of them mainly focus on theoretical analysis and system construction, and there is less research on the specific implementation of smart classroom teaching. This study aims to investigate the implementation path and effectiveness of smart classroom in college English teaching based on analyzing the connotation and characteristics of smart classroom, intending to improve the teaching efficiency of college English teaching while enhancing students' learning experience, as well as to provide a reference for smart classroom teaching.

## 2. Literature Review

### 2.1 Smart Classroom

The concept of "Smart Classroom" began in 2008 when IBM proposed the idea of "Smart Planet". Specifically, the growing advanced technology and the thinking concept that makes almost all things on earth can be connected through the advanced correlation technology, commonly referred to as the "Internet of Everything". Nowadays, the "Internet of Everything" makes the implementation of smart classroom possible. From the perspective of digital education, the smart classroom relies on advanced information and internet technologies to realize an intelligent teaching system, which is different from traditional teaching methods. Immersive learning (e.g. enhanced reality, virtual reality) supported by visualization technology, language training under intelligent feedback mode, etc. are continuously refining the theoretical and practical connotations of informatization of foreign language education under the technical form (Hu et, al. 2020, p. 1). Therefore, under the smart classroom system, teaching resources

are richer, teacher-student interaction mechanisms are more flexible, and students' learning initiative is stronger. In a sense, the smart classroom breaks the barriers of traditional classroom teaching and reconstructs a new teaching environment, highlighting the facilitating role of the deep integration of modern information technology and classroom teaching on teaching activities.

In teaching practice, smart classroom refers to the cross-time teaching activities realized by teachers with the help of platforms such as Tencent Conference, Zoom and Nail in order to achieve the established teaching objectives of the syllabus, relying on cell phones, computers as well as other equipment. Concerning its connotative characteristics, the author, through intensive analysis of related literature and field research, summarizes them in five aspects, three-dimensional, intelligent, personalized, interactive and all-around (Yang, 2014, p. 29-34).

First, the three-dimensionalization of the smart classroom refers to the fact that it has broadened the time and space of traditional classroom teaching, so that students can carry out independent learning at any time, and teachers can carry out teaching activities on time through the network platform. Teaching activities move towards deep learning, and teaching forms are various, such as flipped classrooms, catechism, etc. Secondly, the intelligence of the smart classroom refers to the participation of intelligent machines and software that makes the traditional classroom advanced, the transmission of information is fast and convenient, and the communication between students and teachers becomes timely and efficient, which makes the learning efficiency increase dramatically. Third, the personalization of the smart classroom is reflected in the teachers' respect for students' individual differences. Based on the specific knowledge level of the students, teachers provide appropriate teaching, and students can also personalize their learning content according to their own needs. Fourth, the interactivity of the smart classroom emphasizes the interaction between teachers and students, and students and students, which is collaborative and critical, and is beneficial to enhancing the teaching effectiveness of the smart classroom. Teachers can assign certain tasks to students in the smart classroom, and then use the teaching content to stimulate students' motivation for independent learning. Fifth, the all-roundedness of the smart classroom refers to its all-rounded and multi-dimensional approach to talent development, focusing on the all-rounded development of students and the development of professionals with both good character and good academic performance. The connotative characteristics of these five aspects of the smart classroom reflect the theoretical guidelines and practical details of the smart classroom implementation process, which are strongly significant in guiding foreign language teaching.

In conclusion, smart classroom is a new teaching model that integrates modern information technology, changes inherent teaching methods, and constructs a dynamic, efficient, data visualization teaching environment. Thus, it is beneficial to promote teachers' wisdom teaching and the development of students' wisdom ability (Tang, 2014, p. 23-29+34). The key point of the smart classroom is to regulate the teaching process in all steps by means of information technology, such as big data, cloud computing and AI etc., and to emphasize teacher-student and student-student interactions in teaching, as well as their interactions with content knowledge and technological knowledge (Gu, 2016, p. 66-69). The advantage of smart classroom is that through the integration of information technology, it provides big data support for teaching decision-making and assists teachers to implement personalized teaching in a targeted manner; achieves instantaneous teaching assessment, which makes teacher-student and student-student communication more vivid and flexible; and provides a rich variety of teaching resources to exercise students' independent learning ability and at the same time increase students' learning interest (Mahesh, G., Jayahari, K.R., & Kamal Bijlani., 2016, p. 15-20). Through the smart classroom, some content that cannot be shown by traditional teaching method can be expressed more perfectly, and the rich network teaching resources make the teaching process more vivid and attractive; on the one hand, it can dramatically reduce the time for teachers' lesson preparation and improve their teaching efficiency, and on the other hand, it can stimulate the imagination of students and achieve the objective of understanding the knowledge (Jeon, & Young-Joo., 2015, p. 1-6). This study takes college English teaching as an example to discuss the application of smart classroom teaching mode, which provides reference and basis for the development of smart classroom teaching practice.

## *2.2 The Relationship between Smart Classroom and College English Teaching*

The innovation and development of science and technology are constantly reshaping the shape of education, and profound changes are taking place in acquiring and imparting knowledge, and in the relationship between teaching and learning (Zhong, 2021, p. 85-91+14). Smart classroom is a product of the information age and an inevitable development of teaching, and its substitutable advantages will also lead the innovation and change of teaching in the future (Zhu, 2021, p. 5-20). Similarly, in college English smart classroom teaching, the profound integration of modern information technology and classroom teaching has also created conditions for improving teaching quality. The emergence of smart classroom brings both opportunities and a series of challenges to college English teaching.

Hu (2023) explored the significance and path of the implementation of smart classroom in college comprehensive English teaching, and further investigated the attitudes and feedback of English majors and teachers towards smart classroom through student questionnaires and teacher interviews. The results indicated that the comprehensive English smart classroom broke through the limitations of time and space, and most of the students were able to actively participate in various teaching activities, which improved their learning interest, autonomy, and creativity, and satisfied their diversified and individualized learning needs. Hu (2023) also pointed out some shortcomings of the smart classroom of college comprehensive English. For example, in the smart classroom, the teacher's teaching guidance will be weakened to a certain extent, resulting in students being easily confused. In addition, in the smart classroom, facing the huge amount of teaching resources and the different situations of students, it is difficult to standardize the selection criteria, and teachers are subjective in the selection of teaching resources, which may not be completely suitable for the actual needs and learning abilities of students.

In another study, Zhang (2009) conducted a mixed methods study to investigate the effect of smart classroom reading instruction on EFL learners' reading motivation and interest using instruments such as reading motivation questionnaires, reading comprehension tests, and semi-structured interviews to support the study. The results indicated that smart classrooms could help learners improve their reading motivation and comprehension, and develop their self-directed learning and problem-solving ability.

Furthermore, Wu (2022) summarized the connotation and definition of a smart classroom, explained the constituent elements of a college English smart classroom, discussed the challenges faced by foreign language teaching in the current smart classroom environment, and proposed a model for constructing a new ecology of an English smart classroom. The results showed that the college English smart classroom achieved good effects on curriculum ideology and teaching, and stimulated students' positive emotional experience.

Overall, college English smart classroom can effectively improve the quality of English teaching, but there are also some shortcomings.

### **3. The Application of Smart Classroom to College English Teaching**

“College English” course is a compulsory course for non-English majors, which is a part of humanistic education in higher education and has both instrumental and humanistic qualities. College English learning can improve students' language proficiency, cultural literacy and intercultural communication skills, and help them better adapt to the globalized social and economic environment. However, in the practical teaching process, factors such as the large amount of course content, heavy tasks, relatively single teaching resources, and insufficient teacher-student interaction hinder the achievement of the course objectives to a certain extent. The traditional teaching method of college English teaching is not beneficial to stimulate students' learning interest, develop their independent learning ability and communicative ability, which is difficult to achieve the expected learning achievements (Zhu & Chen, 2020, p. 94-100+111+15). The application of smart classroom provides a new approach to the College English teaching.

#### *3.1 The Design Ideas of Smart Classroom of College English Teaching*

In this study, the “College English” smart classroom is an English classroom that realizes high efficiency and cooperation by intelligentizing the teaching environment and informatizing the teaching content through network technology and learning terminals. The teaching design includes three parts: before, during and after class (see Figure 1).

Specifically, using the information technology platform to make effective learning situation analysis and pre-study assessment before class to realize learning for teaching. During class, firstly, the teacher creates a situation, then the students carry out inquiry learning, and the teacher monitors their learning process in real time as well as summarizes and supplements the results of their discussion, so as to realize the effective interaction and communication between the teachers and the students, students and students. After class, teachers are targeted to assign homework and release extension materials according to the students' learning situation, and record the homework correction process to form micro-classes, so that students can make timely reflection and summary to achieve personalized tutoring.

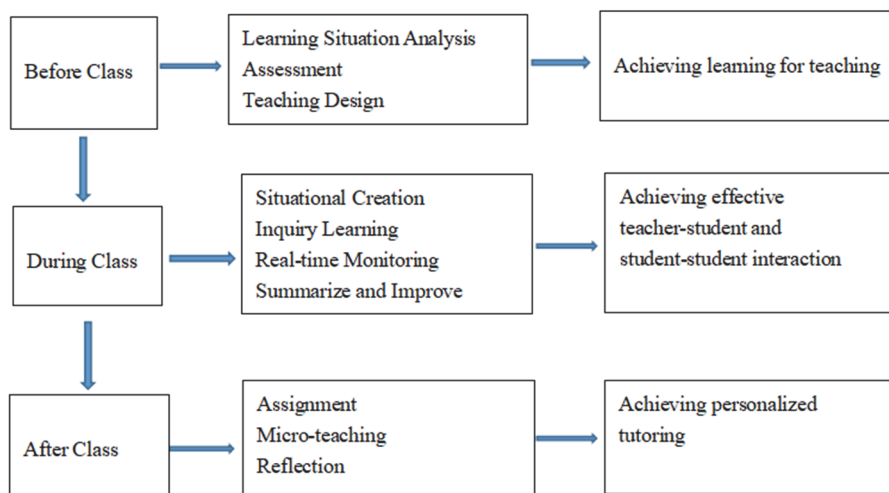


Figure 1. Smart Classroom Teaching Design

### 3.2 Specific Implementation of the Smart Classroom of College English Teaching

Before class, firstly, teachers used the network technology platform to analyze students' historical performance and homework achievement, accurately grasp the background information of the learning situation, and carried out reasonable presetting of teaching objectives. Secondly, with the support of the learning platform, the course team combed through the core knowledge points of the course and released the preview materials and tasks on the platform in advance; students studied independently according to the materials and completed the preview test questions; at the same time, students would record the problems encountered in the process of preview on the platform's discussion section, which would be uniformly collected and sorted out by the teachers. Finally, the teacher made a suitable teaching plan based on the preset teaching objectives and the statistical analysis of students' preview.

In the class, first of all, in order to stimulate students' learning motivation and interest, the teachers have taken a variety of ways to create scenarios and lead into new lessons, such as creating problem scenarios based on the teaching content, the problem setting should be challenging, but not too complex, the students can rely on their own preview results and group discussions to complete quickly. Next, the teacher released the learning tasks on the learning platform, and organized the students to carry out cooperative learning, discussing and presenting the results in small groups (5-6 group members in each group). Based on cooperative learning, effective student-student communication and interaction can be realized, which can not only improve students' communicative ability, but also deepen students' understanding of key points. In the process of group discussion, teachers deeply involved in the groups to give students necessary help, and monitor the whole process of inquiry and learning. And then, the teachers organized 3 groups to present their results in each lesson (45 minutes), with each group electing a representative to explain around one knowledge point, and the other group members to supplement, and the presentation time is 10-15 minutes. In addition, the teacher made timely comments and additions to the presentations of the groups. In the process of group discussion and presentation, group members collaborated with each other and participated deeply, which could effectively improve their communicative skills. Third, in feedback and evaluation, teachers take advantage of the learning platform to evaluate the classroom test. Students can get timely evaluation feedback, and teachers can also quickly grasp the students' learning situation according to the results of the diagnostic evaluation and adjust the priority teaching tasks in a timely manner. Finally, the teacher summarized and sorted out the problems collected in the pre-class preview, the problems that were not adequately solved in the classroom inquiry learning, and the problems that appeared in the classroom test and made appropriate enhancements and extensions to strengthen the interaction between teachers and students.

After class, teachers released targeted assignments on the learning platform based on students' pre-class preview and classroom learning, and organized students to assess each other, giving full use of their subjective initiative. At the same time, teachers posted personalized materials for review on the platform, which urged students to engage in timely consolidation and review. In addition, teachers recorded correction videos during the homework correction process and sent targeted messages to different students to achieve personalized tutoring, so as to achieve tailor-made teaching. Students watched their own homework correction videos through the learning

platform, and communicated with teachers and classmates about their learning feelings and problems, reflected and summarized, and further internalized their knowledge.

#### 4. Conclusion and Implications

The current study aimed to investigate the application and effectiveness of the smart classroom teaching mode in college English teaching. From the research findings, based on the information technology platform, the college English smart classroom has realized effective teacher-student and student-student interactions, and personalized teaching. In the teaching process, students master the core knowledge in an intelligent environment through the teachers' guidance and teaching, as well as the students' independent learning and discussion, which not only developed their independent learning ability, cooperative learning ability, and communicative ability, but also stimulated their creative thinking ability, which helped to better achieve the teaching objectives.

However, smart classroom teaching requires a high level of information technology application, and teachers need to devote a lot of time and energy to learn the relevant knowledge and technology. At the same time, for students, unlike traditional lecture-based teaching, students need to engage in independent inquiry learning, which also requires more time and energy. Therefore, how to combine the actual situation of college English teaching, and optimize the teaching methods under the intelligent teaching environment, so that intelligent teaching in a limited time, better achieve the teaching objectives will be the key direction of our further research.

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