A Study on the Application of the Smart Classroom in English Majors' Reading Teaching

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Abstract. This study carried out an English reading teaching experiment of English majors' in author's college based on the smart classroom teaching model, trying to explore the application value of smart classroom teaching mode in English majors' reading teaching under the Teaching Guide for undergraduate English majors. The experimental results indicate that the theory of smart classroom teaching mode is integrated with the teaching practice, and through different reading practice forms, students can improve their ability of critical thinking and reading comprehension, and students' confidence and enthusiasm of learning English can be enhanced. Finally, it is proved that the feasibility of the smart classroom teaching model in English majors' reading teaching.

Keywords: Smart Classroom Teaching Model · English reading teaching · English majors

1 Introduction

With the advancement of science and modern technology, teaching can be improved effectively, the digital learning environment is constantly changing in practice to make it more and more suitable for the needs of social development. English plays a significant role in today's society, and the weight of reading plays an important role in English teaching. Although teachers put a lot of effort into cultivating students' reading ability, they didn't achieve the desired results. The investigation found that the English classroom in China is still the mainstream of traditional teaching mode, and is still a passive, teacher-centered traditional model. The development of students in schools depends on the education of wisdom, and the key of wisdom education lies in the teaching of wisdom [6]. The smart classroom is the product of the collision of modern technology and cultural education, which is the frontier of modern education research, and it is the learning environment. It is formed by the use of information technology such as Internet, cloud disk and big data. It emphasizes the collaborative development of teachers and students and the combination of in-class teaching and extracurricular learning to stimulate students' potential. What's more, it can provide students with a diverse and intelligent learning environment. With the support of scientific technology, the demand of the Internet and the students is not only the acquisition of knowledge, but also the cultivation of students' innovative thinking [2, 10].

2 Literature Review

2.1 The Definition of Smart Classroom

According to the theory of knowledge construction, smart classroom is an application, which is based on dynamic learning data analysis and cloud-added. It builds an informatized and intelligent classroom teaching mode. Smart classroom is the latest achievement of the development of flip classroom 2.0 in the era of big data [3].

There are five key elements to understand the definition of smart classroom.

(1) In terms of ideas, the smart classroom is a classroom teaching model designed based on knowledge construction theory. According to the characteristics of the spiral of knowledge construction, around the closed loop of teaching before, during, and after class, create an ideal learning environment to achieve the goal of smart classroom.
(2) In terms of technology, smart classroom use modern analysis tools and methods to process and analyze data. Teaching decisions based on data analysis are different from traditional teaching evaluation models and methods.
(3) In terms of approaches, smart classroom adopt dynamic learning analysis and intelligent push throughout the process. By Pre-class assessment to deepen analysis to optimize teaching design and facilitate accurate teaching; improve the teaching strategy and adjust the teaching process by analyzing the test data and real-time feedback during the lesson; through the analysis of homework data and resource push, implement targeted training to achieve personalized learning support.
(4) In terms of application, the smart classroom implements the teaching and learning application of "cloud + terminal". It adopts the "cloud + terminal" service mode of smart classroom. It is composed of micro cloud server, terminal application tools, cloud platform, etc. Through the seamless connection and intelligent use of a variety of terminal equipment in the classroom, it breaks the traditional concept of blackboard, lectern and space-time in classrooms, with dynamic learning data. The acquisition and real-time analysis functions have realized the three-dimensional communication and exchange of teaching and learning, which has caused a structural change in the traditional classroom.
(5) In terms of development, smart classroom is the latest achievement of the development of flip classroom 2.0 in the era of big data. Based on the application of instructional videos, the basic point of flipping the classroom is to reverse the traditional teaching process, and change from "teaching before learning" to "learning before teaching" [9, 11].

The Smart Classroom Teaching Model

With the maturity of Web 3.0 technology, many open, personalized, and intelligent mobile teaching platforms continue to emerge and improve, integrating functions such as sign-in, information release, assignments, teacher-student interaction, voting, discussion, and evaluation. The following are some smart teaching platforms that support mobile terminals: Rain classroom, Duifene, MOOC, School Online, etc. Some of them are smart teaching software or online learning platform by using WeChat public account or APP software. The main features of these smart teaching platforms include: the most portable smart classroom, the most three-dimensional teaching data, the simplest

courseware production; convenient teaching platform integrates that sending and receiving homework, correcting assignments, group discussions, course resources, discussion areas, online exercises, etc. [5].

2.2 The Related Research at Home and Abroad

Researches on smart classrooms abroad started earlier. It could be traced back to the "Smart-Classroom" (Rescigno, R. C, 1988) proposed by Ronald Recinio in 1988. With the three major elements of IBM's "Smart Earth" in 2008, Instrumented, Interconnected, and Intelligent, the Internet of Things and the Internet have begun to fully integrate to achieve coordinated development [7]. In the context of the smart earth, the study of the core position of smart education, the smart classroom, has attracted widespread attention. How to establish an open learning environment and a smart learning environment has attracted widespread attention [8]. After 2008, the number of literatures on smart classrooms increased sharply, with an average annual paper load of more than 40 papers after 2009 and a maximum of 55 papers in 2012. Although the study of smart classrooms abroad was earlier, in the context of the smart earth, with the development of smart technology, cloud services technology and the Internet of Things technology, the research on smart classrooms has started to spread [1, 4].

Today, the teaching function of classrooms is mainly analyzed from a technical point of view. Domestic representative views such as Chen Weidong (2011) put forward the automation of classroom notes, classroom recording, timely feedback, multidimensional interaction [5]. This is a technical analysis of the function of the smart classroom. Huang Ronghuai (2012) puts forward the concept model of "SMART" in the smart classroom, and thinks that the function of the smart classroom is embodied in the 5 aspects of content presentation, situational perception, environmental management, resource acquisition, instant interaction [3]. These five aspects fully demonstrate the role of information technology in teaching, for our future design of intelligent classroom has an important reference.

From the above analysis, it can conclude that the design of smart classroom space in China has evolved from the original research results of architecture and ergonomics to a scientific and general perspective of space layout, and rethink the classroom structure from the nature of "human". The author believes that a mature design framework and design principles are extremely important for the development of smart classrooms.

3 Experimental Design

3.1 Experimental Subjects

This study selected Commutative English for Chinese Learners-Reading Course I (Foreign Language Teaching and Research Press) Unit 1 Meeting People, this course is for the English majors of freshmen, their English competence is average, the average age is 19 years old. As the "digital indigenous" generation, they are willing to explore and receive the latest things and take on the challenges. The design of intelligent classroom teaching is to further change the teaching method and learners' learning method, and thus improve the quality of teaching.

3.2   Experimental Steps

The establishment of a high-quality network environment is the premise and foundation for the smooth development of smart classroom teaching. The overall architecture of the smart classroom information platform includes three components. That is, the smart classroom micro-cloud platform, smart classroom LAN, and smart classroom teaching end. At present, the college of the author has set up the platform to ensure the stability and efficiency of the smart classroom network environment. The main equipment of classroom is Smart PAD.

Take the Unit 1 "Meeting People" as an example. The teaching process includes: (1) Before class: Teachers arrange reading content, and students collaborate to complete the mind map production of reading comprehension. (2) In the course: ① Use PPT to quickly import topics: What can you see from the picture? Today, we will learn something about animals. ② The teacher uses the smart PAD to randomly select the group to display and share the results of the group's mind map drawing, and the group representative displays and uses English to explain the ideas. ③ The teacher commented and asked "What is the central sentence of this article?" Ask the students to answer the question through the smart PAD and submit the answer. The teacher accurately analyzes the learning situation based on the real-time feedback map of the smart PAD, accurately selects some students to share the thinking, and the teacher completes the correction on the spot and realizes the knowledge internalization. ④ The teacher arranged three tasks: "Please find out the words and sentences that reflect meeting people in the article", "Please talk about how these sentences feel about you?", "Please summarize the central sentence of each paragraph", And ask each group to be responsible for different paragraphs, start discussions, and finally the group representatives answer the questions. (3) After class: The teacher arranges tasks for making the micro-lesson for students. This lesson is supported by the smart classroom cloud platform service, so as to achieve teachers 'accurate analysis of academic situation, enhance teacher-student interaction, attract students' attention and improve learning interest.

4   Analysis of the Experiment Results

Through the 12-week experimental work, the smart classroom teaching in English majors' reading course has achieved staged results. From the perspective of students' English performance, this study analyzes the effectiveness of smart classroom teaching in English majors' of the author's college through the evaluation results of the experimental class and the English performance of individual.

4.1   Teaching Effect Analysis Based on Academic Performance

In order to further prove the practical effect of smart classroom teaching, this study selected 30 students of 4 groups in the experimental class. According to the pre-test scores, they are sorted from low to high. Through grade analysis, one-to-one interviews and other methods, the author could analyze the effect of smart classroom teaching. Some details as follows:
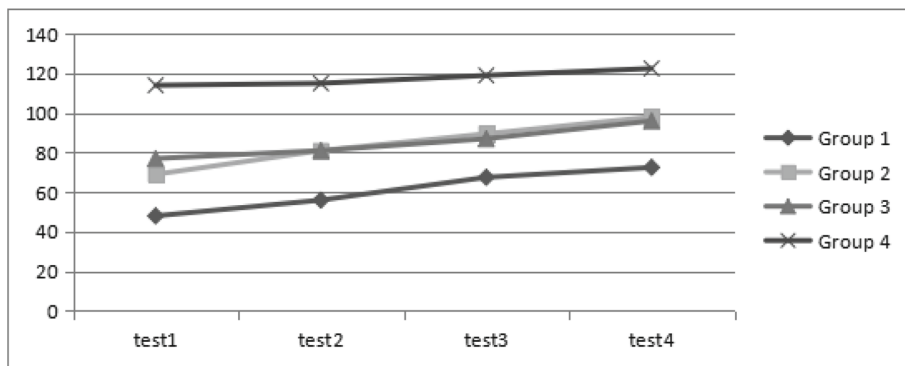
Fig. 1. The chart of average academic diagnosis

Through the academic diagnosis charts, it was found that Group A's first score was 48 points and the fourth score was 72.5 points. Group B scored 69 points for the first time and 98 points for the fourth time. Group C scored 77 points for the first time and 96 points for the fourth time. Group D scored 114 points for the first time and 122.5 points for the fourth time. According to the results of the Group A, B, C, and D scores for four times, as shown in Fig. 1, it is not difficult to see that smart classroom teaching can help students improve their English performance.

4.2 Students' Interview

In order to further understand the students' true thoughts, this research interviewed ten selected students based on the academic diagnosis map, designed five questions, and recorded and organized the students' answers. Through interviews, the author can know that the four students agreed that the PAD teaching used in smart classrooms has stimulated their interest in English learning to a certain extent. For example, tablet teaching makes them more active in group cooperation and memorizes words more easy and improves their ability of reading comprehension.

4.3 Implications of Smart Classroom Teaching Model

To further demonstrate the smooth progress of the smart classroom teaching design model in the school, the following aspects should be noted:

(1) Transform teachers' teaching concepts and improve teachers' information literacy. According to the findings, teachers' recognition of smart classroom teaching is divided into two levels. Some teachers actively support smart classroom teaching, and some teachers have a negative attitude. The reason is that teachers have different teaching ideas. Furthermore, smart classroom teaching demands teachers to have a certain level of information literacy. Therefore, in the information age, teachers should first have modern education ideas. Teachers should continuously change their education concepts through self-study and continuing education, and focus on

training students' cooperative learning and autonomous learning capabilities. Second, teachers need to be able to apply modern information technology, continuously study and become familiar with various learning tools and software, cultivate data awareness, design thinking, and improve their information literacy [12].

(2) Strengthen the supervision of the effect of students' online learning. In the interview between the author and the instructor, the author learned that most students can complete the assignments assigned by the teacher on time and use the tablet to submit, but some students still do not submit their assignments on time. Although teachers can acquire the learning effect of students according to the instant feedback system, if there is no supervision, smart classroom teaching will still be in the form, and the learning effect of students will be in place. Therefore, teachers must strengthen the supervision of students' online learning effects. Corresponding measures should be taken during and after online learning to improve students' learning autonomy [13].

5   Conclusion

The application results of the smart classroom teaching design model show that the smart classroom teaching design model can improve students' English learning enthusiasm and English reading performance to a certain extent, and it is helpful to enhance classroom teacher-student interaction and facilitate students' English vocabulary learning. The specific conclusions are summarized as follows: 1. Teachers and students are more content with the smart classroom teaching design model. According to the evaluation results of the application of the smart classroom teaching design model by teachers and students at English majors' reading course, it was found that teachers and students express support and approval for smart classroom teaching methods. 78% of students choose to use the tablet for teaching. The instructor believes that the design of smart subject teaching is conducive to the cultivation of students 'communication and collaboration ability and the improvement of students' learning motivation. The advantages of intelligent classroom teaching design model are more obvious. Compared with the traditional teaching design model, the smart classroom teaching design model could improve students' interest in English learning and academic achievement.

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