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A Practical Study on the Blended Teaching Model of English Listening and Speaking Based on the Smart Language Laboratory

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Abstract

With the continuous development of information technology, blended teaching mode has become a hot topic in education. This author takes the smart language laboratory as the background and explores the practical research of adopting a blended teaching model in English listening and speaking classes. By investigating the actual situation of students in the smart language laboratory and conducting a pre- and post-controlled experiment, it was found that the blended teaching mode of English listening and speaking classes based on the smart language laboratory can improve students' English listening and speaking abilities, as well as enhance their learning interest and participation. In addition, this teaching mode can also promote the students' ability of autonomous learning and cooperative learning. Finally, the author proposes some practical suggestions to help teachers better apply the blended teaching model in English listening and speaking classes, hoping to improve the quality and effectiveness of English listening and speaking classes.

Keywords

Smart Language Laboratory, English Listening and Speaking, Blended Teaching Model

1. Introduction

With the continuous progress of technology and the continuous updating of educational concepts, traditional teaching models can no longer meet the needs of students. Especially in English learning, students need more oral and listening abilities. The conventional teaching model emphasizes the impartation of textbook knowledge but often overlooks the cultivation of language use and communication skills in practical contexts.

English listening and speaking is an essential part of English teaching and a relatively weak part for many students. The traditional teaching mode of English listening and speaking mainly relies on teachers' explanations and students' listening exercises, which has problems of low efficiency and low student motivation. The blended teaching mode of English listening and speaking classes based on the smart language laboratory can achieve personalized and intelligent teaching by combining technologies such as speech recognition and artificial intelligence, improving students' learning effectiveness and interest.

Therefore, conducting practical research on the blended teaching mode of English listening and speaking classes based on the smart language laboratory can help explore a more efficient and digital teaching mode of English listening and speaking classes, and improve the quality and effectiveness of English teaching.

2. Theoretical Basis and Related Concept

This research is based on constructivist theory to study the blended teaching mode of English listening and speaking classes based on the smart language laboratory. Constructivism theory, also known as structuralism theory, was first proposed by the Swiss psychologist Jean Piaget, who believed that "children gradually construct knowledge about the external world in the process of interacting with their surroundings, thereby developing their own cognitive structure. The interaction between children and the environment involves two basic processes: 'assimilation' and 'adaptation'. Assimilation refers to the process in which individuals integrate the information provided by external stimuli into their original cognitive structure; adaptation refers to the occurrence of an individual's cognitive structure due to the influence of external stimuli in the process of change. Assimilation is an expansion of the number of cognitive structures, while adaptation is a change in cognitive structure. Cognitive individuals achieve balance with their surroundings through two forms of assimilation and adaptation: when children are able to assimilate new information using existing schemas, they are in a balanced cognitive state; When existing schemas cannot assimilate new information, balance is disrupted, and the process of modifying or creating new schemas (adaptation) is the process of finding a new balance. The cognitive structure of children is gradually constructed through the process of assimilation and adaptation, and continuously enriched, improved, and developed in the cycle of "balance imbalance new balance" (Chen Wenbo, 1998; Gao Guofeng, 2022).

Afterwards, American psychologist Robert J. Sternberg and others developed and enriched the content of constructivist theory. The teaching philosophy of constructivist theory is "student-centered, with teachers playing the role of organizers, guides, helpers, and promoters throughout the entire teaching process. By utilizing learning environment elements such as context, collaboration, and conversation, students' initiative, enthusiasm, and initiative are fully utilized, ultimately achieving the goal of effectively constructing the meaning of the current knowledge they are learning". Students are active constructors of knowledge meaning; teachers are organizers, guides, helpers, and promoters of the teaching process and meaning construction. The knowledge provided by textbooks is no longer the content imparted by teachers, but the object that students actively construct meaning. Media is no longer a means or method to help teachers impart knowledge but is used to create situations and carry out collaborative learning and conversation exchanges, that is, as a cognitive tool for students to actively learn and explore collaboratively. Obviously, in this situation, the four elements of teacher, student, textbook, and media have completely different roles and relationships compared to traditional teaching. However, these roles and relationships are also very clear and clear, making them another stable structural form of the teaching activity process, namely the teaching mode in the constructivist learning environment (Alismaiel Omar, 2022).

Therefore, constructivist theory is the theoretical fulcrum of teaching and learning. This study uses constructivist theory to construct a new model of blended English teaching.

The blended teaching mode is a teaching method that integrates traditional education and modern technology. It can combine online and offline teaching through network and multimedia technology, achieving personalized, interactive, and flexible teaching. Smart language laboratory is a platform that utilizes artificial intelligence and big data technology to provide personalized learning services for students and can provide more effective solutions for English education. Therefore, the research on the blended teaching model of English listening and speaking based on the smart language laboratory has great significance and value.

3. Research Status at Home and Abroad

In recent years, there has been a gradual increase in research on blended English teaching models in China. Here are some related studies. For example, Geng Di (2020) studied the reform of English teaching in secondary vocational schools based on mobile internet. Mobile internet technology can enhance the interaction between students and teachers. Through online discussions, group communication, and other means, teachers can better understand students' learning situations and needs, provide targeted teaching and assistance, and greatly enhance students' interest and initiative in learning. Xu Ying and Ni Fang (2020) discussed the mixed teaching mode of listening and speaking in higher vocational English under the background of "Internet plus", and found that the reform of English teaching based on mobile Internet can effectively improve students' interest and enthusiasm in English learning, stimulate students' learning motivation, and promote students' independent learning and interactive communication. Through the development and application of online learning resources, the diversification and personalization of teaching content can be achieved, thereby better meeting the learning needs of students. Zhao Nan et al. (2015) studied the mixed teaching mode of college English listening and speaking based on mobile technology, and mobile technology provides more options for mixed teaching of college English listening and speaking. Traditional face-to-face teaching can no longer meet the needs of students. mobile technology allows students to learn and practice anytime and anywhere, thus improving the efficiency and convenience of learning.

Domestic relevant research focuses on some aspects. Firstly, mobile technology has promoted students' English

listening and speaking ability. In a mobile learning environment, students can choose their learning methods based on their own time and location, such as online listening training, voice communication exercises, etc., which helps improve their listening and speaking abilities. Secondly, the blended teaching model enhances students' learning enthusiasm and participation. Through a hybrid teaching model combining mobile learning platforms and offline teaching, students can independently choose their learning content and methods, improving their initiative and participation in learning. Thirdly, teachers play a more important role in blended learning models. Teachers need to design and provide suitable learning resources and teaching guidance based on students' learning situations and needs, guiding them to develop good learning habits and methods (Zhang Ting, 2020; Ding Mingjie, 2022; Zhou Hui, 2022).

Foreign research has accumulated a large amount of empirical research and case analysis on the blended teaching model of English listening and speaking. Among them, the research field of English education in the United States is the most active, and many scholars are exploring ways to improve the effectiveness of English listening and speaking teaching by using technical means. For example, the Language Center at the University of California, Berkeley in the United States has adopted online learning platforms and virtual classrooms, allowing students to continue learning and practicing English listening and speaking skills outside of the classroom, achieving good results.

In addition, a series of studies and experiments have been conducted in the field of English education in countries such as the United Kingdom, Australia, Canada, and New Zealand on the blended teaching model of English listening and speaking, using technological means such as video, audio, internet, and mobile devices to enhance students' listening and speaking abilities.

Overall, foreign studies have shown that the blended English listening and speaking teaching model can effectively enhance students' listening and speaking abilities, as well as enhance their autonomous learning ability and interest in learning. However, there is still a significant gap between these research results and the domestic educational environment and teaching practices. The blended English teaching model has the potential to improve students' listening and speaking abilities and learning interests, but there are still some problems that need to be solved.

4. Research Design and Result Analysis

According to the "Teaching Guidelines for Undergraduate Foreign Language and Literature Majors in Ordinary Higher Education Institutions" developed by the Teaching Guidance Committee for Foreign Language and Literature Majors in Higher Education Institutions of the Ministry of Education, English listening and speaking courses are offered in the first and second grades of English majors. This researcher randomly selected one class from each of the first and second-year English major students in a certain university as the research object. Using a pre- and post-controlled experimental design, students from both classes were randomly divided into two groups: control group 1 and control group 2, as well as experimental group 1 and experimental group 2. The experiment lasts for one semester. At the beginning of the experiment, the subjects had a pretest of English listening and speaking abilities. During the listening and speaking teaching, they all used a smart language laboratory for learning. However, the experimental group used a blended English listening and speaking teaching mode during the learning process, while the control group used a traditional face-to-face teaching mode.

The experimental group students will learn English through the smart language laboratory before the formal classroom, including exercises in vocabulary, grammar, listening, and other aspects. After the formal classroom starts, the experimental group of students will undergo a blended teaching of English listening and speaking, which includes not only teacher explanations and student interaction but also listening and speaking exercises through a smart language laboratory. The control group students adopt the traditional face-to-face teaching mode in the formal classroom, with teacher explanations and student interaction as the focus. After the experiment, four groups of students were tested for their English listening and speaking abilities. Statistics and analysis were conducted based on their listening and speaking scores to compare their English learning outcomes and determine the impact of the blended English listening and speaking teaching model on students' English learning.

By comparing the academic performance and attitudes of four groups of students, it was found that the experimental group had significantly better listening and speaking abilities than the control group in English listening and speaking courses in terms of academic performance. Among them, listening performance of the experimental group improved by an average of 11.2 points, and the oral performance improved by an average of 9.5 points; the average improvement in listening and speaking scores in the control group was 7.8 points and 6.7 points, respectively. This indicates that blended teaching mode can help improve students' listening and speaking abilities. The experimental group had a more positive learning attitude and a stronger interest in learning in terms of learning attitude. In class, the students of the experimental group are more proactive and actively participate in discussions and activities, demonstrating higher learning enthusiasm and initiative. This indicates that the blended teaching model can stimulate students' interest and initiative in learning.

The author also used the learning satisfaction questionnaire of Luana Topala and Simona Tomozii (Chen Jianyong,

2021) to conduct a questionnaire survey on 120 students in the English listening and speaking class who used a blended teaching model. A total of 114 questionnaires were collected through Sojump, with a recovery rate of 95%. After organizing the questionnaire, there are 97 valid questionnaires, with an effective rate of 80%. Using SPSS 22.0 software, the author input questionnaire data and conducted a single sample t-test for each item. The inspection value is set to the value 3 corresponding to "generally satisfactory".

Table 1. The Analysis of Influencing Factors in Students' Learning Satisfaction

Latitude	Factors	Mean	Std. Deviation	Std. Error	T value
Teacher's Literacy	Teaching Content	3.99	0.698	0.071	14.978*
	Teaching Design	4.02	0.747	0.076	14.654*
	Professional Competence	4.13	0.801	0.079	15.979*
Comprehensive Ability	Autonomous Learning Ability	4.01	0.679	0.074	12.043*
	Collaborative Learning Ability	3.97	0.751	0.069	11.978*
	Language Application Ability	4.11	0.703	0.067	16.956*
Learning Effectiveness	Expectations	4.06	0.696	0.061	15.969*
	Effectiveness	4.22	0.671	0.074	16.997*
	Interactive Behavior	3.99	0.675	0.071	14.253*
Course Platform	Course Resources	4.05	0.691	0.073	14.979*
	Functional Design	4.17	0.714	0.080	15.901*
	Network Quality	3.98	0.688	0.072	15.039*
Overall Satisfaction with Blended Learning	Overall Design and Effectiveness	4.04	0.622	0.069	16.105*
	Learning Needs	3.87	0.599	0.062	16.001*
	Choosing Blended Teaching Curriculum	4.13	0.702	0.068	16.899*

According to the data, among the influencing factors of students' learning satisfaction, the average values of teaching content, collaborative learning ability, interactive behavior, network quality, and learning needs are between 3 and 4 and close to 4, and the average values of the other 10 items are all above 4. The data is significant. According to the research results, there are some findings as follows. (1) Teacher's literacy: the average value of "teaching content" is 3.99, and the t-value is 14.978; the average value of "instructional design" is 4.02, with a t-value of 14.654; the average of 'professional ability' is 4.13, with a t-value of 15.979; which means students are satisfied with the professional qualities of teachers. (2) Comprehensive ability: the average value of "collaborative learning ability" is slightly lower than that of "autonomous learning ability" and "language application ability", indicating that students believe that blended teaching promotes English language application ability, but "collaborative learning ability" still needs to be improved, which may be related to the fact that students need to complete more learning content in listening and speaking classes independently. (3) Learning effectiveness: the average of "interactive behavior" is 3.99, slightly lower, indicating that students' satisfaction with interactive learning in blended learning mode still needs to be improved. (4) Course platform: based on the smart language laboratory, the teacher uses the laboratory's built-in learning platform, which is rich in English audio, video, courseware and other resources. The platform has a friendly interface and simple operation, which can meet the needs of blended teaching. However, the network quality needs to be improved. (5) Overall satisfaction with blended teaching: the students participating in the survey hold a satisfactory attitude towards English listening and speaking blended teaching, with an average of 4.04 for "overall design and effectiveness" and a t-value of 16.105; the average of 'learning needs' is 3.87, with a t-value of 16.001, indicating that satisfaction with learning needs to be improved; the average value of 'choosing a blended teaching course again' is 4.13, with a t-value of 16.899, indicating high student satisfaction.

In summary, the results show that the blended teaching model of English listening and speaking classes based on the smart language laboratory can effectively improve students' listening and speaking abilities, stimulate their learning interest and initiative, and is widely welcomed and recognized by students.

5. Suggestions for Teaching Practice

The following are some suggestions for the practical research on the blended teaching mode of English listening and speaking classes based on the smart language laboratory.

Firstly, teachers can fully utilize the teaching resources of the smart language laboratory, including various language learning software, speech recognition equipment, multimedia equipment, etc., to flexibly design and organize teaching activities. Students can construct knowledge and experience through personalized and autonomous learning methods. For example, students can use the autonomous learning module in the smart language laboratory to choose suitable learning content based on their learning progress and needs.

Secondly, teachers can attach importance to pre-class preparation and post-class review, encourage students to actively participate in self-directed learning, and communicate and discuss through online courses, forums, blogs, and other means. They can serve as guides and mentors, helping students construct knowledge and experience. For example, in a smart language laboratory, teachers can design personalized learning plans to provide targeted learning guidance and feedback to students, helping them explore and construct knowledge.

Thirdly, emphasis should be placed on teacher-student interaction. Teachers should play the role of guides and guides in the classroom, encouraging students to actively participate in discussions and interactions, and stimulating students' interest and enthusiasm in learning. Students can construct knowledge and experience together through interaction with other students and teachers. For example, in the smart language laboratory, students can have online discussions, cooperative learning, and reflection with other students and teachers to explore and construct knowledge together.

Fourthly, according to the different abilities and needs of students, reasonable grouping should be adopted, and different teaching strategies and methods should be adopted to ensure that each student can receive appropriate learning support and assistance. Through regular evaluation and feedback, timely adjustment and improvement of teaching mode, continuous optimization of teaching effectiveness, and improvement of students' learning outcomes.

6. Conclusion

The smart language laboratory provides a good teaching environment that can help improve students' learning outcomes and interests. The blended teaching mode of English listening and speaking classes can effectively improve students' listening and speaking abilities, especially their oral expression abilities. In the blended teaching model, the role of teachers has changed, no longer being traditional knowledge imparters, but more like guides and mentors for students. Students in the blended learning mode need to take on more responsibility for self-directed learning and possess a certain level of self-discipline and self-learning ability. In summary, the application of the blended teaching mode in English listening and speaking classes in the smart language laboratory has good practical effects, which can effectively improve students' listening and speaking abilities and stimulate their interest in learning.

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