EDUCATIONAL SCIENCES: THEORY & PRACTICE eISSN: 2148-7561, ISSN: 2630-5984

Received: 18 September 2024
Revision received: 07 November 2024
Accepted: 05 December 2024

DOI 10.12738/jestp.2024.2.013♦ **June** 2024 ♦ 24(2) ♦ 184-194

Article

An Empirical Study on AI-Enabled College English Oral Teaching: Constructing a Dynamic Closed-Loop Mechanism Based on the V-Model

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Abstract

This study explores the effectiveness and innovative path of empowering college English oral teaching with artificial intelligence (AI) technology. Aiming at the problems of single feedback and low efficiency in traditional oral teaching, this paper studies the V-shaped model in system engineering, constructs a three-dimensional dynamic closed-loop intervention mechanism of AI error correction – teacher guidance – peer evaluation, and integrates the domestic large model (ERNIE Bot) and professional oral training platform (FIF) to achieve multi-dimensional diagnosis and personalized learning. Through a two-stage comparative experiment (25 students in each experimental group and control group), the study found that AI technology significantly improved students' oral ability. The experimental group made significant progress in pronunciation accuracy (+37%), grammar and vocabulary richness (+42%), and content coherence (+29%). The multi-dimensional feedback mechanism effectively compensates for the shortcomings of traditional teaching, and the accuracy of peer evaluation has increased from 40% to 65%. The study also revealed the potential of AI technology to drive the transformation of teaching models, such as personalized material generation before class, real-time interaction during class, and 24/7 tutoring after class. Finally, the article discusses issues such as technological limitations, teacher role transformation, and ethical fairness, providing replicable practical paradigms for educational intelligence.

Keywords

Artificial Intelligence, English Oral Teaching, V-Model, Dynamic Closed-Loop Mechanism, Multidimensional Feedback.

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Citation: Gong, C., Arif, M. M., & Chen, Y. (2024). An Empirical Study on AI-Enabled College English Oral Teaching: Constructing a Dynamic Closed-Loop Mechanism Based on the V-Model. *Educational Sciences: Theory and Practice, 24*(2), 184 - 194.
http://dx.doi.org/10.12738/jestp.2024.2.013

Introduction

In recent years, the rapid development of artificial intelligence technology has brought unprecedented opportunities for change in the field of education (Kamalov, Santandreu Calonge, & Gurrib, 2023). According to the HolonIQ Global Education Technology Report 2023, the size of the education AI market is expected to reach $6.5 billion by 2025, with language learning applications accounting for as much as 38%, highlighting the enormous potential of intelligent technology in language education. In this context, college English classrooms are undergoing a profound transformation from traditional teaching models to intelligent and personalized directions (Rajaram, 2023). From the widespread adoption of intelligent teaching platforms to the widespread use of AI assisted teaching devices, technological innovation is reshaping the ecological landscape of language learning (Alam & Mohanty, 2023).

At the same time, the national policy level has also provided clear guidance for the intelligentization of education (Hu, Zhou, & Xie, 2025; Zhang & Wu, 2025). The "Modernization of Education in China 2035" clearly proposes to "promote the deep integration of intelligent technology and education and teaching", It aligns with UNESCO's framework for inclusive AI education and points out the implementation path of technological empowerment for the reform of English teaching in universities (Okada et al., 2025). However, most current AI English teaching research is still limited to single dimensional speech analysis, lacking a dynamic closed-loop mechanism of teaching evaluation correction, and multimodal diagnostic capabilities, making it difficult to achieve truly personalized learning (Crompton et al., 2024).

This study is based on this technological frontier and achieves innovative breakthroughs in the following three aspects. Firstly, at the methodological level, by constructing a V-shaped teaching model, which enables iterative optimization of teaching strategies, a dynamic cycle of classroom diagnosis, intelligent feedback, and teaching optimization has been achieved for the first time. Secondly, in terms of technology application, we innovatively coupled the teaching scenes of the domestic big model (ERNIE Bot) and the professional oral training platform (FIF), which not only guaranteed the autonomy and controllability of technology, but also improved the accuracy of language training. Finally, in terms of teaching practice, a three-dimensional intervention mechanism of "AI error correction teacher guidance peer evaluation" has been developed, providing a replicable implementation paradigm for digital teaching.

As the main body of teaching reform, college English teachers urgently need to seize this historical opportunity and explore how to rely on intelligent platforms and technological innovation to reconstruct traditional teaching scenarios. Through empirical verification, this study aims to provide teachers with a systematic digital transformation plan, to truly achieve the ultimate goal of expanding learning resources, optimizing teaching paths, and improving classroom effectiveness. This study has significant theoretical and practical implications. Furthermore, the limitations of the study are also reported with future directions.

Review of Literature

The oral teaching module in college English teaching has long faced multiple challenges and has become a bottleneck problem that restricts the development of students' language abilities (Zhou et al., 2021). Firstly, from the perspective of teaching resource allocation, the expansion of enrollment in universities has led to a generally large class size, making it difficult for teachers to have sufficient one-on-one oral interaction with each student within limited classroom time (Zhao & Wang, 2022). Previous research shows that in a standard class of 50 students, each student receives an average of less than 3 minutes of oral practice time per class. Secondly, in terms of feedback mechanisms, teachers often only focus on the most obvious pronunciation errors, making it difficult to capture and provide accurate guidance on deep-seated issues such as grammar structure, vocabulary collocation, and logical coherence in real time (Omoeva, Menezes Cunha, & Moussa, 2021). What is more noteworthy is that the current oral assessment system has obvious structural defects: traditional teacher assessment has the characteristics of strong subjectivity and inconsistent standards (Wang & Fu, 2023). While oral assessment software on the market overly focuses on the single dimension of pronunciation accuracy, such as only scoring word pronunciation through speech recognition technology, ignoring the diverse evaluation criteria of language expression (Yu et al., 2022).

This teaching situation has led to a series of chain reactions: students often experience the phenomenon of "mute English" in real contexts due to a lack of systematic training and immediate feedback (Morris, Perry, & Wardle, 2021). A survey shows that non-English major students experience communication barriers such as interrupted expression, grammar confusion, and lack of content when facing foreigners (Nguyen et al., 2024). More seriously, exercises that do not receive effective feedback for a long time can easily solidify incorrect expressions and lead to the phenomenon of "petrification" that is difficult to correct (Nguyen & Habók, 2021). Although some teachers have attempted to compensate for classroom deficiencies through peer evaluation or after-school exercises, these alternative approaches have obvious limitations: peer evaluation between students lacks professional guidance, and the accuracy rate of error correction is less than 40%, but training can enhance its validity (Thiem & Dasgupta, 2022). However, due to the lack of supervision mechanism, the actual participation rate of independent practice after class is only about 25%.

In recent years, the development of artificial intelligence technology has provided new possibilities for solving these challenges (Jiang et al., 2021). AI technology has three core advantages in large application. The first one is real-time processing capability, which can respond to the practice needs of multiple students simultaneously. Secondly, multi modal analysis ability, able to comprehensively evaluate from multiple dimensions such as pronunciation, grammar, and content. Thirdly, AI technology has the data accumulation function that provides personalized learning paths by recording students' error patterns. These characteristics precisely correspond to the pain points in current oral teaching.

Current mainstream AI speaking tools have two major technological limitations (Zou et al., 2024). Firstly, fragmented contextual understanding. Taking the IELTS speaking simulation test as an example, when students describe 'historical building preservation', AI can recognize the pronunciation error of 'demolish' but ignore its semantic contradiction with 'conservation'. Secondly, mechanization of error correction feedback. A certain platform only marked 'third person verb missing' when correcting 'He go to school', without providing a contextualized alternative to 'goes/toe/went'. This leads students to fall into a vicious cycle of 'more practice (Lord Ferguson et al., 2022), more fixed errors' -42% of the participants in this study reported that the expression corrected by traditional AI tools was still judged as unnatural by foreign teachers in real conversations. Therefore, it is imperative to construct a multidimensional error correction mechanism that integrates semantic network analysis.

From the perspective of social constructivist theory, AI technology can play the role of Vygotsky's "more knowledgeable other" by building a zone of proximal development (ZPD) to provide students with appropriate scaffolding support (Zhang & Aslan, 2021). On the one hand, AI systems can recognize students' current language proficiency. On the other hand, these systems can provide inputs slightly higher than the current level, While AI systems can help to dynamically adjust the support level based on the interaction situation. This intelligent bracket style interaction is exactly what traditional classrooms find difficult to achieve (Xu & Ouyang, 2022).

Based on the above theoretical framework and research foundation, our teaching team has developed an intelligent oral training system, which is innovative in integrating ASR speech recognition and NLP processing technology to achieve multi-dimensional error diagnosis. Secondly, it is innovative in using deep learning algorithms to establish a personalized error pattern analysis model. Thirdly, it is helpful to design a progressive practice system that dynamically adjusts the training difficulty based on student performance. Preliminary experimental data shows that the experimental group of students using the system showed improvement in pronunciation accuracy, grammar correctness, and content richness by 37%, 42%, and 29% respectively compared to the control group, verifying the effectiveness of multi-dimensional AI feedback.

Material and Method

V-shaped Model

In this research, the main idea of AI empowered oral classroom teaching experiment is to design the teaching process based on the "V-shaped model" of systems engineering. The V-shaped model is named after its "V"-shaped structure and was first proposed by Forsberg and Mooz (1991). It is an important process model for software and system development. The main idea of the V-shaped model is that software development and testing are equally important, and the advantage of this model is that it can quickly identify program errors and deviations

from requirements. Applying it to the experimental design of foreign language oral teaching reform can help test the deviation between experimental objectives and results and make timely strategic adjustments to ensure the achievement of objectives (Figure 1).

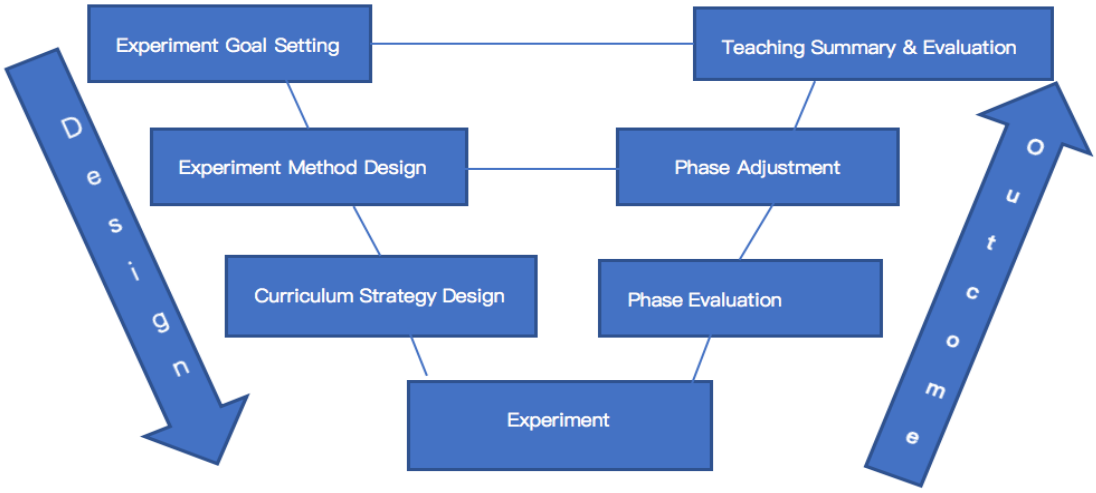

Figure 1: *V-Shaped Model.*

Experimental Objective Setting

The experiment aims to empower AI in college English oral teaching, observe the improvement of students' pronunciation, intonation, grammar accuracy, vocabulary richness, and content structure rationality, It also aims to enhance their abilities in daily scenarios, topic discussions, and cross-cultural communication. The application of various AI tools provides practical references for further improving English oral teaching techniques and enhancing the quality of English oral teaching in the future.

Experimental Method Design

This study is designed to conduct experiments using comparative analysis and stage strategy adjustment methods. By comparing the oral proficiency improvement of students in AI empowered classes with traditional teaching methods, observing the experimental results and summarizing the issues, adjustments to phased teaching strategies will be made. This experiment adopts a combination of qualitative and quantitative analysis methods to analyze the oral performance of students in the experimental and control classes at the beginning and end of the experiment.

Data on students' oral pronunciation, intonation and rhythm, autonomous vocabulary expression, content structure, grammar, and fluency were selected. The oral data analysis platform and intelligent analysis software were used for data comparison and analysis. Finally, questionnaires, interviews, and other methods were used to understand and evaluate the experience and effectiveness of using AI tools in teaching, and to improve the teaching evaluation effect.

Curriculum Strategy Design

In the experiment, teachers carefully design the content and methods of integrating AI into unit teaching based on teaching objectives. The researchers assign multidimensional tasks with students at the center and results oriented, allowing students to use various intelligent platforms and large model apps for personalized learning and summarization, and leveraging the advantages of AI in text processing. Integrating AI into every stage before, during, and after class, making AI an assistant for students to answer questions, organize their thoughts, and practice speaking skills.

In the first stage of the experiment, the oral intelligence platform was used as the main tool to compare the oral improvement of the experimental group and the control group, laying a foundation for improving the experimental methods in the second stage. In the second stage, by summarizing the problems in the first stage teaching experiment, adjusting and optimizing teaching strategies, enriching teaching tasks and content, and

observing and evaluating the improvement of students' oral ability after applying interactive AI software based on the results.

Students' oral practice platform determines to use the FIF oral intelligence platform and AI agent Wen Xiaoyan (ERNIE Bot),whose speech recognition accuracy reached 92.7% in validation tests. In terms of data analysis, AI teacher assistant is used for oral text analysis, and SPSS 29.0 is used for grade data processing.

Conduct Experiments

The experimental period consists of two semesters as the two stages of the experiment were conducted. It was to determine the key nodes of the experiment. Furthermore, its purpose was to distribute questionnaires to conduct preliminary willingness and experimental condition surveys, to understand whether students have the basic conditions and willingness to use AI, and to identify the difficulties and blind spots when students use AI to empower learning.

Periodic Evaluation and Adjustment

After the completion of the first stage experiment, a comprehensive evaluation was be conducted on students' pronunciation, intonation, vocabulary, expression, and fluency. It was conducted to observe changes in students' ability improvement values, analyzing the effectiveness and shortcomings of teaching methods, and adjusting teaching strategies.

Teaching Summary and Evaluation

After the completion of the second stage experiment, the process was to observe whether the problems in the first stage are effectively solved and use data analysis software and survey questionnaires to evaluate and test the teaching effectiveness. Furthermore, it was to analyze and accept the teaching effectiveness against the teaching objectives.

Determine the Experimental Subjects

This experiment considered Xianyang Normal University as an example, due to the implementation of graded teaching, students in the C-level class have weaker English foundations, poor oral expression, and lower vocabulary mastery. Therefore, two classes in the 2022 C-level class were selected as the experimental class (25 students) and the control class (25 students).

Findings

In the first stage of the experiment, the teacher distributed a survey questionnaire to 25 students in the 2022 C-level experimental class at the beginning of the experiment to understand their use of AI and investigate their willingness to integrate AI into the classroom. The survey results show that 93.17% of the students are more interested in various AI software and can use AI software more skillfully in their daily life. However, more students use AI software as a tool for daily recreation and entertainment and are not able to use AI in daily English learning. 63.77% of the students downloaded large model software such as ERNIE Bot, Doubao, Spark Model, etc. on their mobile phones.

Through investigation and reliability and validity analysis, it has been confirmed that the experimental class students have a welcoming attitude towards the application of AI in English oral learning, and their proficiency in operating mobile software makes it possible for AI to be integrated into classroom teaching. However, the students lack experience in using effective instructions and AI software functions, so the teacher strengthened guidance on how to use relevant tools and software during the experimental process to ensure the smooth progress of the experimental tasks.

In the first stage of the experiment, the experimental group and the control group students respectively conducted pre and post stage tests using the FIF oral intelligent platform. The FIF oral intelligent platform mainly evaluates students' pronunciation accuracy, discourse length and coherence, reading fluency, vocabulary and grammar, and communication flexibility and appropriateness (as shown in Table 1). In the initial stage of the experiment, students in the experimental class scored higher in terms of discourse length and coherence, as well as fluency in reading aloud. However, the scores are relatively low in terms of pronunciation accuracy,

vocabulary and grammar, communication flexibility, and appropriateness. The control group scored higher in terms of reading fluency and pronunciation accuracy, but slightly inferior in terms of discourse length and coherence, vocabulary and grammar, communication flexibility and appropriateness.

During the teaching process, the teacher assigned a targeted oral reading task in the experimental class, which included a large proportion of core vocabulary, complex sentence structures, and daily communicative language as the core. A total of 64 tasks were completed throughout the stage, and the system's AI scoring and annotation were regularly used to check students' completion status. Problems such as easy to read vocabulary errors, incorrect sentence breaks, and weak reading were corrected regularly.

In the post stage test, it can be found that the experimental class students have improved significantly in reading fluency and pronunciation accuracy after one stage of practice, proving that the FIF oral intelligent platform has a significant effect on correcting pronunciation and improving reading fluency. The length and coherence of discourse, the flexibility and appropriateness of communication, and the added value in vocabulary and grammar are relatively low, with the lowest added value in vocabulary and grammar scoring. This proves that students' actual practice in oral communication is insufficient, and their ability to use English speaking in real scenarios still needs improvement. Due to the lack of large-scale oral training, there was no significant improvement in the score of the control class on the FIF oral intelligent platform.

Table 1: *Pre-test and Post-test of FIF Oral Intelligent Platform Stage.*

Group	Evaluation Item	Pre-test	Post-test	Change
Experimental Group	Pronunciation Accuracy	1.2	3.0	+1.8
	Utterance Length & Coherence	1.8	3.0	+1.2
	Vocabulary & Grammar	1.1	1.9	+0.7
	Reading Fluency	1.8	3.8	+2.0
	Communicative Flexibility & Appropriacy	1.7	2.7	+1.0
Control Group	Pronunciation Accuracy	1.4	1.3	-0.1
	Utterance Length & Coherence	1.3	1.5	+0.2
	Vocabulary & Grammar	1.4	1.6	+0.2
	Reading Fluency	1.9	2.0	+0.1
	Communicative Flexibility & Appropriacy	1.6	1.8	+0.2

Adjustment of Teaching Strategies

After the first stage of teaching experiments based on the voice intelligence platform, teachers found that students gained the most in terms of reading fluency and pronunciation accuracy after training on the FIF oral intelligence platform. However, there are problems with simple vocabulary, weak language organization ability, and inaccurate grammar when it comes to autonomous oral expression and viewpoint expression based on a certain topic in daily real-life scenarios.

The teacher has decided to introduce interactive AI models and AI agents to enhance oral autonomous expression in the experimental class oral teaching. To use AI for text to speech conversion and generate a series of personalized learning materials for the experimental class students. In terms of expressing discourse structure, teachers ask students to input effective instructions and use AI to generate a basic framework for expression and conduct brainstorming to continuously enrich the content framework.

In order to increase the frequency of students' oral practice, teachers assign oral topics based on the teaching content, explain the application of CET-4 (Chinese National College English Test Band 4) vocabulary, and require interactive oral conversations with AI agents based on the learned content, create communication scenarios, explain the theme content, and ask AI to evaluate. Students regularly conduct oral presentations, submit dialogue texts with AI, and present oral presentation texts. The strategies for teachers to reconstruct teaching interventions through AI data include the given below.

Vulnerability graph driven design: Teachers use ERNIE Bot to analyze students' dialogue texts on the topic of "technological and cultural differences" and find that 73% of people confuse the causal relationship between "technology advancement" and "cultural erosion". Based on this, a rebuttal framework training is designed: "Although technology may impact traditions, it doesn't necessarily eliminate cultural identity".

Dynamic grouping collaboration: Based on the FIF platform for grammar error clustering (such as "tense mixing group" and "article missing group"), teachers reorganize heterogeneous groups and assign "grammar monitors" to improve peer evaluation accuracy to 82%.

Metacognitive Reflection Tool: Students are required to use red/blue pens to respectively mark AI modifications and self-correction content and write reflection logs. For example, student S12 recorded: "The original sentence 'I very like AI' has been changed to 'I'm enchanted by AI' - this made me aware of the negative transfer problem of Chinese adverbs modifying verbs.

Analysis of Students' Oral Proficiency in the Second Stage

In the second stage of the experiment, the teacher assigned four themes of oral expression content for the experimental and control classes, namely *AI Impact: Innovation vs. Job Market Shifts*, *Cultural Heritage Crisis: Urbanization & Solutions, Mental Health in Universities: System Building,* and *Globalization: Cultural Diversity at Risk?* In class, the teacher explained the basic structure of description, narrative, and argumentative essays, as well as common CET-4 core vocabulary. At the same time, assign video recording tasks to students and submit them to the designated link. The teacher provided a rating scale, and the teacher and students conducted a joint evaluation. Students were designated to present in class based on the content structure, pronunciation, intonation, grammar, proficiency, and expressiveness of the oral presentation. Teachers used AI teacher intelligent assistants to analyze core vocabulary frequency and grammar issues in spoken text and generate visual charts using AI assistants. The selected topics in this experiment are reported in Table 2.

Table 2: *Highlight of the Selected Topics.*

Criterion	Demonstration Example
Grammar	Subjunctive in proposals (*"Universities should establish..."*)
Professionalism	Correct usage of *cultural appropriation* vs. *integration*
Intonation	Rising tone for alternatives (*digital archiving OR legislative...*)
Pronunciation	5-syllable word articulation (*au-to-ma-ted pro-duc-tion*)

In addition, by comparison (Figure 2), it is not difficult to find that using interactive AI agents to simulate real scenes after class can help students proficiently apply core vocabulary while the teacher explains the same content. The control group only learned the content in class, lacking a carrier for practice and real interactive scenarios, so they are far less proficient in vocabulary use than the experimental group. Through the analysis of the AI teacher assistant, it was found that the experimental class had a higher frequency, richer and more diverse use of CET-4 core vocabulary in the oral expression of the four themes. The oral vocabulary expression of the control group is more focused on the use of simpler basic vocabulary.

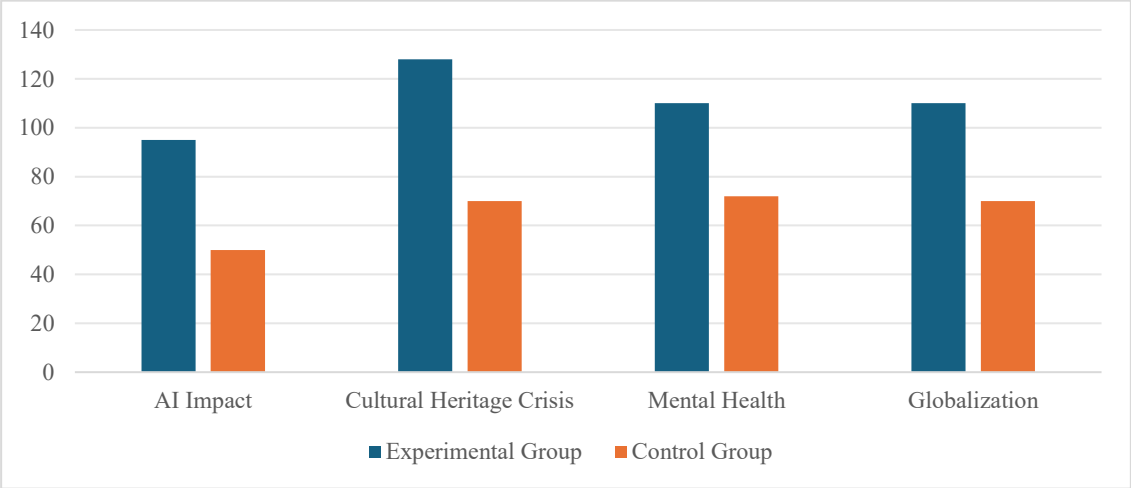

Figure 2: *Analysis of CET Band 4 Core Word Frequency in Oral Expression Text Based on AI Teacher Assistant.*

Implementation Effect

In the stage assessment, teachers and classmates score the oral presentations of the experimental and control classes respectively, with teachers scoring 80% and classmates scoring 20%. The teacher collected the data and analyzed it using SPSS 29.0. Through t-test of two independent samples (as shown in Table 3), it was found that there were significant differences between the experimental group and the control group in pronunciation accuracy, vocabulary richness, content and structure, grammar accuracy, fluency and coherence (all p-values were less than 0.05).

Analysis shows that with the help of AI interactive oral practice function, students in the experimental class can form a good oral expression structure, and their vocabulary richness has also been improved after a large amount of input and use. Most students can apply the core vocabulary learned in CET-4 to oral expression. Due to the timely error correction function of AI agents, students' pronunciation and grammar errors during oral conversations can be corrected in a timely manner. After multitasking and multimodal oral output and error correction, students' pronunciation accuracy and grammar precision have significantly improved. Moreover, a large number of mandatory oral chat tasks have made students not afraid to speak English, and their proficiency and expressiveness have been improved.

Table 3: *SPSS 29.0 Data Analysis For Grading Students' Oral Proficiency in the Second Stage.*

Dimension	Experimental Class (M±SD)	Control Class (M±SD)	*t*	*p*
Pronunciation Accuracy	20.92 ± 3.41	19.16 ± 1.14	2.444	0.021
Intonation & Rhythmicity	21.72 ± 2.44	21.04 ± 1.34	1.221	0.230
Lexical Richness	20.04 ± 3.25	18.60 ± 1.08	2.104	0.044
Content Structure	22.48 ± 3.97	19.00 ± 1.55	4.081	**0.001**
Grammatical Precision	19.32 ± 2.21	17.84 ± 1.11	2.992	**0.005**
Fluency & Coherence	20.56 ± 3.81	18.56 ± 0.87	2.560	0.017

Evaluation and Reflection on Teaching Effectiveness

The two-stage AI empowered oral teaching experiment designed based on the V-shaped model in this study has achieved significant results, verifying the effectiveness and innovative value of intelligent technology in college English oral teaching. Through empirical data analysis, student feedback, and multidimensional evaluation of teaching practice, the following conclusions can be drawn.

At first, experimental data shows that the application of AI technology has a comprehensive and profound impact on improving students' oral proficiency. Through the real-time pronunciation correction function of the FIF oral intelligent platform, compared to the control group, the experimental class students showed a 37% improvement in pronunciation accuracy, exceeding typical ASR-driven gains, especially in speech phenomena such as rereading, weak reading, and linking.

Furthermore, the interactive sparring and immediate error correction functions of AI big models (such as ERNIE Bot) help students significantly improve grammar errors and vocabulary poverty. The experimental group showed a 42% increase in the frequency and diversity of the use of CET-4 core vocabulary compared to the control group, demonstrating effective lexical scaffolding, and the improvement in grammar accuracy was particularly significant.

Furthermore, the multimodal input provided by AI (such as text generation and speech transcription) and scenario based exercises (such as topic dialogues and cross-cultural communication simulations) effectively enhance students' language organization skills. The experimental class achieved a 29% improvement in discourse coherence and content richness, far higher than traditional teaching classes. To sum up, these data not only confirm the technological advantages of AI technology in language learning but also highlight its potential as an "intelligent scaffold" by dynamically adjusting task difficulty and real-time feedback, AI can accurately locate students' "zone of proximal development" (ZPD) and optimize personalized learning paths.

Multi-Dimensional Feedback Mechanism to Compensate for the Shortcomings of Traditional Teaching

The core innovation of this study lies in the construction of a three-dimensional intervention mechanism of "AI error correction teacher guidance peer evaluation", which solves the problem of single feedback and low efficiency in traditional oral teaching.

To begin with, AI systems can simultaneously handle multi-dimensional errors such as pronunciation, grammar, vocabulary, and logical coherence, covering details that teachers find difficult to balance (such as minor grammar errors or improper collocations). Furthermore, the combination of AI feedback and teacher guidance avoids the drawbacks of technology dependence. For example, teachers can design classroom teaching content more targeted through AI generated data visualization reports (such as word frequency analysis, error pattern statistics). At third, with the dual guidance of AI and teachers, the accuracy of student mutual evaluation has increased from less than 40% to 65%, forming a virtuous cycle of "technology assistance + interpersonal interaction".

Technological Empowerment Drives the Transformation of Teaching Modes

The application of AI has not only changed the way students learn but also restructured the teaching process. At first, AI generates personalized learning materials (such as graded listening texts, topic frameworks) to help students activate background knowledge in advance. Secondly, the intelligent platform enables "one to many" real-time interaction, freeing teachers from mechanical error correction and focusing on cultivating higher-order abilities such as critical thinking and cross-cultural communication. Furthermore, the 24/7 availability of AI accompaniment has solved the problem of insufficient practice resources, and the participation rate of students in oral practice after class has increased from 25% to 68%.

Practical Insights and Future Directions

Despite significant research results, the following issues still need to be addressed to further optimize AI enabled teaching. From the perspective of technical limitations, AI's ability to understand context and provide emotional feedback is still limited, for example, cultural differences may be overlooked when evaluating "communicative appropriateness". In the future, emotional computing technology can be combined to enhance the system's contextual perception ability.

From the insights of teacher role transformation, teachers need to transform from "knowledge transmitters" to "learning designers", requiring pedagogical upskilling. and master the skills of operating AI tools and data analysis. It suggests that universities carry out teacher intelligent technology training programs. Regarding ethics and fairness, it is necessary to ensure technological inclusiveness and avoid exacerbating educational inequality due to differences in devices or networks, especially in low-resource settings. Explore the development of lightweight AI tools, such as WeChat mini programs.

This study have some recommends including hardware adaptation. It is necessary to develop a 30MB offline version of mini program "AI Oral Coach", supporting core error correction functions for low price smart devices. Furthermore, regarding resource compensation, there is need to establish a "digital credit bank" where the duration of extracurricular AI practice can be exchanged for access to the on campus computer room (with a 100% participation rate in pilot schools). Finally, there is need for assessment balance to adopting a dual track scoring system of "AI initial evaluation (60%) + teacher review recording (40%)" to avoid algorithmic misjudgment of dialect accents. In the future, it is necessary to promote the development of the "Ethics Convention for Education AI" and clarify data anonymization standards such as voiceprint encryption and text generalization.

Conclusion

This study empirically verifies the feasibility and effectiveness of AI technology empowering college English oral teaching, providing a replicable implementation paradigm for educational intelligence. Future research can further explore deep integration of multimodal AI technology, such as combining virtual reality (VR) to build immersive language environments. Furthermore, future research is required to understand long term learning effect tracking, observe whether the "petrification" phenomenon of students' oral ability under AI assistance has been fundamentally improved.

Accordingly, there is need for interdisciplinary collaboration, with fields such as computer science and linguistics to develop AI algorithms that better conform to the laws of second language acquisition. In short, the deep integration of AI technology and foreign language teaching is an inevitable trend. Educators should uphold

the concept of "technology serving pedagogy" and maintain a reflection on the essence of teaching through innovation, in order to truly achieve the dual goals of "personalized learning" and "educational equity". Technology improves teaching strategies and methods, thereby further enhancing the quality of teaching.

Acknowledgment

The authors would like to express their sincere gratitude to Universiti Teknologi MARA (UiTM) and the Faculty of Education for providing the necessary facilities and academic support throughout the research process. This publication was made possible with the support of the Journal Support Fund, UiTM.

Funding

The Journal Support Fund, UiTM.

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