

AIGC-Empowered Restructuring and Innovation of College English Oral Instruction: An Empirical Study Based on Higher Vocational Colleges

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Abstract: This research probes into the creative mode of college English oral teaching, which is given power by Artificial Intelligence Generated Content (AIGC) technology. The outcomes show that the AIGC-powered instruction model has a significantly better effect than traditional teaching methods on three core dimensions: improvement of oral ability, study motivation, and self-efficacy. This paper builds an “AI plus Teacher” double-led teaching model, providing theoretical support and practical direction for the digital transformation of university English education.

Keywords: Artificial intelligence generated content (AIGC); College English oral instruction; “AI + Teacher” collaboration

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1. Research background

Along with the maturation of generative artificial intelligence (AIGC) in domains including language generation, intelligent dialogue, and individualized content provision, mainstream tools such as ChatGPT and DeepSeek have gradually entered language learning situations, breaking the space-time constraints and model obstacles of traditional language teaching. China’s Next Generation Artificial Intelligence Development Plan explicitly puts forward the demand of “*promoting the deep integration of AI and education to promote teaching quality and efficiency*”^[1]; therefore, it draws a map for the digital transformation of higher education. Based on the 2022 Report Concerning the Situation of English Instruction in China’s Higher Vocational Colleges, more than 60 percent of higher vocational schools confront problems including a lack of high-quality oral teaching resources and inadequate teaching personnel; thus, they cannot satisfy the individual learning requirements of students. At the same time, the shortage of real language communication situations makes students have low self-confidence when they speak English, and also causes obvious anxiety among students. Through simulating real communication situations, giving instant and accurate feedback, and producing personal learning paths, AIGC provides a resolution to these teaching difficulties, hence acting as a

critical breakthrough for changing spoken English situations in higher vocational colleges.

2. Current state of domestic and international research

The international study regarding the utilization of AIGC in language education has its starting point comparatively early. Smith (2022) has discovered that AI-driven individual-customized learning systems are able to change learning content dynamically and difficulty on the basis of student learning behavior data, therefore effectively promoting language learning results and efficiency^[2]. Brown (2021) confirmed that generative AI has extremely good performance when it generates personalized learning resources and gives corrective feedback for language errors, and therefore it provides targeted learning support to students^[3]. Zhang and Wang (2023) have proved that AIGC is able to simulate true cross-cultural communication situations, thus giving students an immersive oral practice environment, which, therefore, significantly pushes forward the acquisition of oral ability^[4]. Zhai (2023) has carried out a systematic review on the application modes of generative artificial intelligence in the educational field, therefore putting forward the view that it can give strength to teaching through four roads: automatic assessment, feedback and evaluation, individual guidance, and help for special demands^[5]. Lee and Kim (2023), in one experimental study involving students of a Korean higher vocational college, have shown that the experimental group that uses AI chatbots has achieved significantly higher oral fluency and language accuracy when compared with the control group that uses traditional teaching methods^[6]. On the whole, international academic research generally has confirmed the strong latent capacity of AIGC in language teaching education, especially its unique superiorities in making up for the shortage of individual practice and imitating real language situations in traditional classrooms^[7,8].

The domestic research on AIGC applied in education is still at an early phase, and the targeted studies that specifically focus on English oral teaching in higher vocational colleges are especially lacking. Wang Shouren (2020) emphasized that English teaching reform in higher vocational colleges needs to use AI and other information technologies to strengthen the abilities of students in language practice^[9]. In recent years, the scholars inside China, Jiao Jianli and Chen Ting (2023), have explored the application roads of human-computer cooperation modes in English teaching^[10]; therefore, Zhou Jing and other researchers (2023) have carried out analysis on the present situation of intelligent foreign language education study in China and its development tendencies in the AIGC era^[11]. In the concrete domain of high-level occupational English spoken teaching, Liu Yan (2021) has pointed out that AI spoken evaluation systems can effectively relieve students' spoken anxiety and raise their driving force for spoken practice^[12]. Chen Li and Li Hua (2022) have demonstrated that AI platforms can significantly enhance students' learning persistence and study results^[13]. Zhao Ming and other researchers (2024) have confirmed that AI is able to supply learners with more abundant chances for language input and output; hence, it promotes their public speaking ability^[14].

Through synthesizing both domestic and international research results, the study can discover a number of limitations: the majority of current empirical research studies possess short time spans; The objects of our research are usually common undergraduate students; at present, the study do not have enough systematic research on the "AI plus Teacher" cooperation working mechanism; and the quantitative study about the influence that AIGC brings to learners' affective elements (for example oral anxiety and learning motivation) are not much, hence it cannot completely expose AIGC's effect on non-cognitive capabilities. To address these gaps, this research conducts an actual study that focuses on students of higher vocational colleges, builds an "AI + Teacher" double-led teaching model, and provides actual cases and theoretical support for the use of AIGC

in higher vocational college English spoken teaching.

3. Research design

3.1. Research questions

- (1) comparison with traditional teaching models, is it possible that the AIGC-empowered instructional model can significantly promote the English oral ability of students?
- (2) it possible that the AIGC-empowered teaching model can effectively promote students' English learning motivation and lower their oral anxiety degree?
- (3) the "Artificial Intelligence + Teacher" double-led teaching model, how should teachers and AI cooperate to enhance teaching effect?

3.2. Research subjects

The study has selected 95 students of the first year from one higher vocational college to be the research objects. The average score before the experiment for the experimental class was 58.4, while the average score before the experiment for the control class was 57.9. The independent samples t-test that the study conducted gave $t = 0.52$, $p > 0.05$, indicating there is no significant difference in English proficiency between these two classes before the experiment was carried out.

3.3. Instructional model design

The experimental class used the AIGC-given-power "AI + Teacher" double-led teaching model, taking iFlytek as the core AI tool, which acts as a virtual talk partner and intelligent feedback system. The control class used a traditional teacher-centered teaching mode, which puts emphasis on the teacher's explanation and pair/group exercises inside the classroom.

3.4. Data collection instruments

This study employed multiple data collection instruments as detailed below:

- (1) English Spoken Language Ability Examination: A combination of pre-test and post-test was used. The test content was designed on the basis of the Common European Framework of Reference for Languages (CEFR), and two English teachers with rich experience carried out independent scoring on these tests.
- (2) Learning Motivation Questionnaire: It is adapted from the Intrinsic Motivation Inventory (IMI), and a 5-point Likert scale is used by us (1 = completely disagree, 5 = completely agree). It was constituted by 20 items that cover four dimensions: interest and enjoyment (intrinsic motivation), perceived ability, effort and importance, and pressure and tension (scored in reverse direction). The Cronbach's α coefficient of the questionnaire is 0.87; hence, it shows that the reliability and validity are good.
- (3) Teacher and Student Feedback Investigation Forms: Student investigation forms concentrate on AI use experience and self-perceived learning results, while teacher investigation forms concentrate on teaching efficiency and the experience of AI cooperation.

4. Results and discussion

4.1. Comparison of English oral proficiency

After the experiment, a post-test check of English spoken ability was carried out for two classes. The

findings are presented in **Table 1**. According to what **Table 1** shows, the post-test scores of the two classes have obviously improved when compared with their pre-test scores ($p < 0.001$). Furthermore, the post-test average score of the experiment class (82.6) was much higher than the score of the contrast class (66.3); an independent samples t-test shows that $p < 0.001$. This result proves that the teaching model empowered by AIGC possesses an obvious superiority in promoting students' spoken English ability; thus, it effectively makes up for the deficiencies of conventional teaching.

The outcomes of this practice-based study are consistent with the past research results by Smith (2022) and Brown (2021), hence further proving that the AIGC model can greatly promote students' spoken English ability. The main reason is that AIGC gives many individual practice chances and immediate responses, hence resolving the problems of not enough practice hours and slow feedback that exist in traditional teaching rooms. The true communication situations that AI simulates let students practice in a pressure-free environment, hence gradually raising their oral fluency and accuracy.

Table 1. Comparison of pre-test and post-test of oral English proficiency between the two groups

Group	Pre-test Mean	Post-test Mean	Average Improvement	t-value	p-value
Experimental Group (AIGC)	58.4	82.6	+24.2	12.36	<0.001
Control Group (Traditional)	57.9	66.3	+8.4	4.52	<0.001

4.2. Comparison of learning motivation results

When the experiment was completed, learning motivation questionnaires of the two classes were carried out. The findings are displayed in **Table 2**. According to what **Table 2** displays, the average scores of the experiment class on internal motivation, self-efficacy belief, and effort/importance were obviously higher than the scores of the control class ($p < 0.01$). On the other hand, the average score for pressure/tension (which uses reverse scoring) was obviously lower than that of the control group ($p < 0.01$). This shows that the instructional model empowered by AIGC is able to effectively raise students' study motivation, reinforce their self-efficacy, and at the same time greatly lower their degree of oral anxiety.

Table 2. Comparison of learning motivation dimensions between the two groups

Dimension	Experimental Group Mean	Control Group Mean	Difference	p-value
Intrinsic Motivation	4.3	3.1	+1.2	<0.01
Self-efficacy	4.2	2.9	+1.3	<0.01
Effort/Importance	4.4	3.3	+1.1	<0.01
Stress/Tension (Reverse Scoring)	2.1	3.6	-1.5	<0.01

4.3. Student and teacher feedback

The statistical analysis that was done on the collected valid feedback question papers has shown: 92% of students hold the view that the AI conversation partner has the effect of reducing their oral anxiety; 87% of students held the appreciation for the individualized feedback and studying routes that the AI supplied, holding the belief that it assisted in the promotion of their practice efficiency. Among the teacher group, 90 percent maintained that the "AI plus Teacher" double-leading model had notably promoted teaching efficiency and lowered their working burden; 80% of respondents expressed that artificial intelligence allowed them to have more time to focus on students' emotional conditions and the cultivation of cultural literacy.

4.4. Construction of the “AI + Teacher” dual-led instructional model

According to the features and requirements of English spoken teaching in higher vocational colleges, this article builds an “AI + Teacher” double-leading teaching model, thereby clarifying the work division and cooperation between AI and the teacher. The core duty of AI mainly consists of carrying out regular teaching work, including supplying individual oral practice and imitating real communication situations; providing immediate feedback and carrying out exact modifications of mistakes; and dynamically producing individual study routes to lead students in finding out and making up deficiencies. The core duties of the teacher include carrying out higher-level, direction-giving teaching work, specifically including: dealing with complicated language problems and cultural differences that AI is unable to solve; giving mood support and paying attention to students’ psychology; organizing classroom interactive activities; monitoring students’ learning progress; and optimizing teaching strategies for the purpose of achieving teaching with precision.

The study must point out that the “AI + Teacher” double-lead model does not aim to make AI take the place of teachers. Instead, by means of human-computer cooperation, it puts its objective on reaching the core target of “*technology gives power to education, teachers guide growth*”, which extremely accords with the new educational pattern of “AI and teacher cooperate” put forward by Huang Ronghuai and Yang Junfeng (2023) ^[15].

5. Conclusion

Regarding the actual difficulties that exist in English spoken teaching within higher vocational colleges, this research has built and verified an AIGC-supported “AI plus Teacher” double-led teaching model. In comparison with traditional teaching methods, AIGC has enhanced students’ spoken English ability, motivation, and self-controlled study capabilities. The double-leading mode of “*artificial intelligence plus teacher*” has provided proof that it is feasible and effective. This research not only gives new actual cases and theoretical support for the use of AIGC in high vocational English speaking teaching, but also provides important practical thoughts for the digital change of university English education. In future research, people should explore how AIGC is integrated with emerging technologies like virtual reality (VR) and augmented reality (AR), thereby further pushing the continuous enhancement of higher vocational English oral teaching quality, and making a contribution to the cultivation of high-quality skilled talents.

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Disclosure statement

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