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# Research on the Innovative Application of Generative Artificial Intelligence in Spoken English Teaching

**Ningqin Li***

Qingyang Open University, Qingyang 745000, Gansu, China

****Author to whom correspondence should be addressed.***



**Abstract:** The rapid development of generative artificial intelligence has brought innovative opportunities to spoken English teaching. This study focuses on the innovative application of generative AI in spoken English teaching, explores the internal compatibility between the two in terms of intelligent interaction, personalized learning and real-time feedback, analyzes the reconstruction path of the human-computer collaborative teaching mode, and puts forward core strategies such as immersive environment creation, differentiated teaching implementation and formative evaluation. At the same time, the study deeply analyzes practical challenges such as technical limitations, role transformation of teachers and students, and ethical risks, aiming to provide theoretical references and practical implications for the in-depth integration of artificial intelligence in foreign language teaching, and promote the development of spoken English teaching towards intellectualization and precision.

**Keywords:** Generative artificial intelligence; Spoken English teaching; Human-computer collaboration; Personalized learning; Teaching mode innovation

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## 1. Introduction

With the rapid development of technology, generative artificial intelligence (AIGC) has aroused heated discussions in all walks of life, bringing many opportunities and challenges to the education industry. On July 10, 2023, seven departments, including the Cyberspace Administration of China, jointly issued the "Interim Measures for the Management of Generative Artificial Intelligence Services." The measures clearly encourage the innovative application of generative AI technology in various industries and fields, generate high-quality positive and healthy content, explore and optimize application scenarios, and build an application ecosystem.

Spoken English teaching has long been plagued by problems such as lack of real context, insufficient personalized guidance and delayed feedback. Generative AI has powerful language generation and interactive functions, which may solve the above difficulties. Exploring the in-depth integration of generative AI and

spoken English teaching is not only related to the optimization of teaching efficiency, but also points to the core reform of talent cultivation mode [1]. This study comprehensively sorts out the compatibility of generative AI in spoken English teaching, reconstructs the teaching mode, formulates application strategies, and carefully analyzes potential difficulties, so as to provide references for foreign language teaching reform in the intelligent era.

## 2. Compatibility between generative AI and spoken English teaching

### 2.1. Support of intelligent voice interaction technology for oral practice

Generative AI integrates advanced speech recognition and synthesis technologies, which can simulate real dialogue scenarios and provide students with all-weather oral practice opportunities. Students can conduct voice interactions with the AI system at any time, speak out bravely in a relaxed atmosphere, and gradually eliminate psychological barriers. Intelligent voice interaction facilitates multi-round dialogues; the system adjusts the difficulty and topic direction of the dialogue according to students' expressions, making oral practice more in line with actual communication [2]. This human-computer dialogue fills the gaps of short practice time and monotonous scenarios in traditional classrooms, and provides more application possibilities for language expression.

### 2.2. Construction mechanism of personalized learning paths

Generative AI can dynamically build different learning paths according to students' oral proficiency, learning habits and cognitive characteristics. The system analyzes learners' pronunciation, coherence and vocabulary usage to accurately identify their strengths and weaknesses, and then provides targeted learning materials and training items. The personalized design fully considers differences in learning speed and goals, allowing each student to improve effectively within an appropriate difficulty range [3]. This adaptive learning mode breaks the "one-size-fits-all" situation in traditional teaching, achieves precise guidance, and greatly optimizes the relevance and practicality of oral learning.

### 2.3. Realization of real-time feedback and language correction functions

Generative AI has strong natural language understanding ability and can provide timely and accurate feedback on students' oral expressions. The system can not only detect pronunciation errors, grammatical mistakes and inappropriate word usage, but also provide specific revision suggestions and model expressions. This real-time feedback mechanism effectively reduces the time for errors to become ingrained, prompting students to adjust their language output promptly and form correct language habits. AI can record the types and development of learners' common errors, providing data support for subsequent teaching decisions, transforming language correction from empirical judgment to scientific analysis and greatly improving the accuracy of oral teaching.

### 2.4. Dynamic balance mechanism of language input and output

Generative AI can precisely control the dynamic coordination of language input and output, effectively solving the problems of "insufficient input" or "excessive output pressure" in traditional spoken English teaching. According to learners' real-time performance, the system intelligently adjusts the frequency and difficulty of demonstration pronunciation to ensure a steady supply of comprehensible input. In addition, AI promotes high-quality language output through dialogue guidance, topic expansion and expression support [4]. This two-way adjustment mechanism forms a virtuous cycle between input and output, avoiding poor expression due to

insufficient input and learning frustration caused by excessive output pressure, thus providing a mechanical guarantee for the orderly development of oral ability.

# 3. Reconstruction of spoken English teaching mode based on generative AI

## 3.1. Design of human-computer collaborative dialogue scenarios

The key to generative AI promoting spoken English teaching lies in creating a human-computer collaborative dialogue environment. Teachers and AI systems give full play to their respective advantages to jointly design diverse scenarios covering various communicative tasks, including daily life, academic discussions, workplace communication and other contexts. AI provides timely language interaction assistance and conducts scenario simulations, while teachers focus on task guidance, emotional motivation and cultural edification. Such human-computer collaborative dialogue design not only reflects the technical advantages of AI, but also retains teachers' humanistic care, enabling oral training to achieve ideal results with both technical support and manual guidance, and effectively improving students' overall language application ability.

## 3.2. Integration mode of virtual foreign teachers and real classrooms

As an important application form of generative AI, virtual foreign teachers break the limitations of time and space, providing students with authentic language input and interactive experience. Virtual foreign teachers can be integrated with real classroom teaching: pre-class preview guidance, in-class scenario simulation assistance, and after-class extended practice consolidation [5]. The leading role of teachers in actual classrooms is not weakened, but complements virtual foreign teachers to jointly create an online-offline integrated teaching environment. This integration not only increases students' exposure to diverse languages, but also enhances the emotional color of classroom teaching, achieving effective integration of technical empowerment and traditional advantages.

## 3.3. Intelligent generation of multimodal teaching resources

Generative AI can intelligently generate multimodal spoken English teaching resources including text, images, audio and video according to teaching needs. The system automatically generates dialogue scripts, situational animations and interactive courseware, greatly enriching the presentation of teaching content. The design of multimodal resources fully considers learners' cognitive characteristics and interests, effectively arousing learning motivation and improving the perception quality of language input [6]. Teachers can also quickly create various teaching materials with AI to meet the individual needs of students at different levels, transforming spoken English teaching resources from static uniformity to dynamic generation, and highlighting the adaptability and attractiveness of optimized teaching.

# 4. Core application strategies of generative AI in teaching

## 4.1. Creating immersive language communication environments

Generative AI can simulate real or fictional communication scenarios to create an immersive language learning environment for students. According to teaching themes, the system automatically generates dialogue roles, plot development and cultural backgrounds, prompting students to use language naturally in contexts. The creation of immersive environments emphasizes the organic integration of language input and output, allowing students to master language forms and communication strategies while completing tasks [7]. This strategy

effectively makes up for the monotonous context in traditional classrooms, helping students accumulate communication experience in simulated scenarios and improving the flexibility and appropriateness of language use.

## 4.2. Implementing differentiated oral English teaching plans

Relying on the learning analysis ability of generative AI, teachers can design and implement differentiated oral English teaching plans. The system assigns learning tasks by students' levels and dynamically adjusts difficulty gradients to ensure each student is challenged and supported within their own zone of proximal development. This differentiated plan not only focuses on optimizing language ability, but also takes into account the cultivation of learning interest and self-confidence, making teaching more in line with individual needs. With learning situation data provided by AI, teachers can intervene accurately in the learning process, realizing the transformation from group teaching to personalized guidance and comprehensively improving the overall efficiency of oral teaching.

## 4.3. Carrying out formative learning evaluation and feedback

Generative AI provides technical support for the implementation of formative evaluation. The system can record students' oral performance in real time and conduct continuous tracking and analysis from fluency, accuracy, communication strategy application and other aspects. Instant evaluation reports not only show learning achievements, but also reveal development paths and potential problems, providing references for teachers and students to adjust teaching strategies [8-9]. Formative feedback focuses on process and development direction, helping students establish self-reflection and improvement awareness, transforming evaluation from summative judgment into an incentive system to promote learning, and effectively arousing students' deep learning motivation.

## 4.4. Output-oriented teaching practice supported by intelligent platforms

To solve the problem of "disconnection between learning and application" in English learning, Fif Speaking and Pigai Network are deeply integrated into English formative assessment tasks in intelligent teaching reform. Fif Speaking drives students to complete reading, retelling and other language outputs in simulated communication through high-simulation human-computer dialogues; Pigai Network provides real-time error correction and multi-dimensional feedback on transcripts of oral expressions. The collaborative application of the two not only realizes a real-time feedback mechanism, but also provides a basis for differentiated teaching through data tracking, effectively solving the "disconnection between learning and application" dilemma and enabling students to achieve effective language output while completing formative assessment tasks.

# 5. Challenges and optimization paths in the application of generative AI

## 5.1. Technical limitations and language authenticity issues

At present, the application of generative AI in spoken English teaching has technical limitations: the generated language often lacks emotional color and cultural appropriateness in real communication. The system has limited ability to recognize complex contexts and cannot fully imitate the richness and flexibility of human dialogue [10]. Language authenticity issues directly affect the development of learners' communicative competence; over-reliance on AI may lead to stylized and simplified language expression. The optimization

path is to continuously improve AI algorithms, enhance their ability to model cultural contexts and emotional factors, and maintain human-computer collaboration to ensure that technical applications conform to the goal of real language ability development.

### 5.2. Role transformation of teachers and students and teaching adaptability

After the adoption of generative AI, the roles of teachers and students have changed greatly. Teachers are no longer simply knowledge imparters, but learning designers and promoters; students have changed from passive recipients to active explorers. This transformation places higher requirements on teachers' technical literacy and teaching design ability [11,12]. Some teachers may struggle to adapt, and students also need time to adapt to the new learning method based on human-computer interaction. Appropriate solutions should focus on improving the teacher training system, strengthening technical and ethical literacy, and guiding students to establish correct technology application concepts, so as to achieve mutual promotion in teaching during the role transformation.

### 5.3. Ethical risks and establishment of usage norms

The application of generative AI in spoken English teaching brings ethical risks such as data privacy, algorithmic bias and academic integrity. The collection and use of students' voice data should strictly follow the principle of privacy protection to prevent information leakage and abuse [13-14]. Content generated by AI may have cultural bias or value deviation, so content review should be strengthened to provide correct value guidance. It is crucial to establish usage norms: schools should formulate clear technical application rules, improve teachers' and students' ethical awareness and sense of responsibility, keep technological applications focused on the core goal of education and cultivation, and seek dynamic coordination between innovation and standardization.

## 6. Conclusion

Generative artificial intelligence has brought new development opportunities to spoken English teaching. It has deep compatibility with spoken English teaching in intelligent interaction, personalized learning and real-time feedback. This human-computer collaborative teaching model involves not only the reconstruction of teaching mode, but also the exploration of core application strategies, as well as the solution of various challenges encountered in practice. These elements together form a research framework for generative AI-assisted oral teaching.

In the future, with the continuous upgrading of technology and the continuous reform of educational concepts, the positive role of generative AI in foreign language teaching will become more prominent. Only by always prioritizing students' growth and carefully defining the boundaries of technology can we achieve in-depth integration and long-term stable development between artificial intelligence and foreign language education.

## Disclosure statement

The author declares no conflict of interest.

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