

# The Integration and Innovation Exploration of Generative Artificial Intelligence and College English Teaching

Xulan Li\*

Zhejiang Yuexiu University of Foreign Languages, Shaoxing 312000, Zhejiang, China

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

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**Abstract:** In the digital intelligence era, generative artificial intelligence (GAI) has gradually integrated into social work, life and learning, injecting new vitality into the digital transformation of college English teaching. GAI has great potential in intelligently generating resources, supporting personalized learning, and providing instant evaluation and feedback. Its deep integration with college English teaching to construct a human-machine collaborative teaching model has become an important direction for the transformation and upgrading of English teaching. This paper analyzes the problems existing in traditional college English teaching, expounds the main scenarios for the integration of GAI and college English, and explores the integration and innovation paths from the aspects of teaching model, integration approach, role transformation and teaching evaluation, to provide references for accelerating the digital transformation and upgrading of English classrooms and cultivating students' comprehensive English literacy.

**Keywords:** Generative artificial intelligence; College English; Teaching; Integration; Innovation

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## 1. Introduction

In the era of rapid development of artificial intelligence technology, generative artificial intelligence has been rapidly popularized in the field of higher education, becoming an important tool enabling precise teaching and personalized learning, and leading college English teachers to reconstruct the classroom teaching ecology. The core of generative artificial intelligence (hereinafter referred to as "GAI") is to use machine learning, deep learning algorithms and big data integration to generate novel and practical content according to user instructions<sup>[1]</sup>. College English is a public course aimed at cultivating students' listening, speaking, reading and writing abilities, and improving their autonomous learning and English application abilities. However, some teachers still adopt the traditional teaching mode, which is characterized by uniformity, lack of personalization, weak interaction and untimely evaluation feedback, making it difficult to carefully analyze each student's situation and provide guidance<sup>[2,3]</sup>. GAI can precisely provide solutions to the above problems.

In addition to its intelligent generation function, it can also provide more comprehensive and in-depth services for teachers and students, serving as a lesson-preparing partner for teachers and an intelligent tutor for students. Therefore, exploring the integration path of GAI and college English teaching and reconstructing and innovating the English teaching model are of great significance for improving teaching efficiency and meeting students' personalized learning needs.

## **2. Main scenarios for the integration of generative artificial intelligence and college English**

At present, relying on its advantages in intelligent generation, personalized service and data processing, GAI shows strong application value in all links of college English teaching. The main application scenarios are as follows.

### **2.1. Teachers' lesson preparation**

GAI can integrate and expand college English teaching resources, enabling teachers to improve lesson-preparing efficiency and reduce their workload<sup>[3]</sup>. Traditional teaching resources are limited to textbooks, teachers' accumulation and campus platforms, while GAI can break through such limitations, integrate English learning resources from workplace, daily life, academic and other fields, and generate a personalized and diversified resource library according to teaching objectives and students' learning conditions, helping teachers enrich classroom teaching content<sup>[4]</sup>. Meanwhile, GAI can generate personalized practical tasks and provide targeted learning resources based on students' different learning interests, knowledge reserves and language levels, further boosting teachers' lesson-preparing efficiency.

### **2.2. Students' personalized question-answering**

GAI can act as an intelligent tutor and learning partner, providing personalized, differentiated and all-weather services for students' problems encountered in all aspects of college English learning. In the pre-class preview stage, tools such as Kimi and Finchat can provide supporting learning resources for students' difficulties in vocabulary, grammar and reading, assisting independent study. In classroom learning, GAI offers instant Q&A services, giving detailed explanations and consolidation exercises for students' personalized questions to improve their comprehension<sup>[5]</sup>. In after-class learning, GAI can set personalized improvement goals, push tailored learning suggestions for students' weaknesses in reading, writing, listening and speaking, and help them solve doubts and fill gaps<sup>[6]</sup>.

### **2.3. Learning effect evaluation**

GAI can make up for the deficiencies of the traditional assessment system. With data collection and processing capabilities, GAI can record students' performance in online learning, classroom participation, homework and other links, dynamically evaluate learning effects, and identify weaknesses in listening, reading and writing<sup>[7]</sup>. Meanwhile, through semantic analysis technology, GAI can diagnose problems in students' oral expression and writing, point out errors in logic, wording and grammar, and provide personalized suggestions<sup>[8]</sup>. In addition, GAI can generate visual evaluation reports based on class learning data, helping teachers judge the class's learning trends and weak points.

### **3. Integration and innovation paths of generative artificial intelligence and college English teaching**

Combined with the technical advantages of GAI and the laws and characteristics of college English teaching, targeted integration paths are proposed to promote the deep and efficient integration of the two.

#### **3.1. Reconstruct teaching model and build a “teacher-student-machine” collaborative system**

The reconstruction of the teaching model is the key to the deep integration of GAI and college English teaching. It is necessary to give play to the auxiliary role of GAI in teaching and learning, and build a “teacher-student-machine” collaborative teaching system<sup>[9]</sup>.

##### **3.1.1. Establish a personalized teaching model driven by a three-dimensional scaffold**

Teachers should use GAI’s data analysis, scene simulation and personalized tutoring functions to build a personalized teaching scaffold guided by teachers and empowered by AI<sup>[10]</sup>. First, establish a knowledge learning support system. In terms of vocabulary and grammar knowledge, use GAI to analyze students’ learning situations, generate personalized learning reports, diagnose their knowledge weak points, and push forward detailed explanations of key points and corresponding practice tasks to consolidate students’ knowledge foundation. Second, establish an ability training support system. In the training of oral expression and writing skills, use GAI to create simulated dialogue scenarios, guide students to communicate with intelligent agents, and provide targeted guidance. Third, establish a thinking cultivation support system. Use GAI to design thought-provoking questions that are relevant to real life, guide students to analyze and answer from a dialectical perspective, and exercise their thinking abilities.

##### **3.1.2. Construct a GAI-driven BOPPPS model**

Teachers can integrate GAI into the whole process of college English teaching to reconstruct an intelligent teaching process. In the pre-class introduction stage, GAI uses its automatic generation function to provide cultural materials, short videos and dialogue scenarios related to the topic, thereby stimulating students’ interest in learning. In the goal-setting stage, GAI makes personalized adjustment suggestions for the teacher’s plan based on the teaching content and student data. In the pre-assessment stage, GAI analyzes the students’ pre-class answer data to understand their knowledge foundation. In the classroom interaction stage, GAI introduces diverse English reading resources to carry out virtual challenges and scenario exchange games, thereby stimulating students’ interest in reading. In the post-assessment stage, based on the real-time evaluation report generated by GAI, the teacher provides guidance for students’ difficult questions. In the classroom summary stage, GAI generates a visual knowledge tree to guide students to sort out and improve their knowledge system.

##### **3.1.3. Jointly build a sound, smart ecology for college English teaching.**

By introducing GAI agents into smart teaching platforms, teachers can develop online resource libraries, select high-quality reading materials, dialogues and writing samples, and encourage students to use intelligent agents for preview, Q&A and consolidation, forming a collaborative smart ecosystem.

## **3.2. Innovate integration paths to achieve full-process empowerment**

Combined with the teaching modules of listening-speaking, reading and writing in college English, innovative integration paths are implemented to run GAI through the whole process and improve teaching quality.

### **3.2.1. Listening-speaking teaching**

Construct a teaching mode of “AI scene simulation + immersive interaction + teacher guidance”. Teachers use GAI to simulate daily communication, workplace dialogue and cross-cultural communication scenarios, creating an immersive oral environment and improving pronunciation accuracy. Differentiated listening materials are generated for students at different levels to gradually enhance listening discrimination. For example, in listening training for similar words, GAI generates targeted materials for repeated practice, and speech recognition technology quickly diagnoses problems in reading after listening.

### **3.2.2. Reading teaching**

Construct a teaching mode of “intelligent guidance + personalized inquiry + teacher instruction”<sup>[10]</sup>. GAI analyzes students’ reading interests and foundations to generate thematic materials, and guides students to design virtual characters for interactive inquiry, creating an interesting reading atmosphere. During Chinese traditional festivals, GAI not only generates daily English expressions but also extends reading materials about local cultural customs, promoting in-depth reading and broadening horizons through human-machine dialogue.

### **3.2.3. Writing teaching**

Construct a teaching mode of “intelligent collaboration + hierarchical guidance + peer assessment”. GAI helps students analyze topics, clarify requirements and generate outlines. After students finish writing, GAI provides real-time grammar correction, logic analysis and vocabulary optimization with targeted revision suggestions. Teachers then conduct hierarchical guidance: focusing on grammar and vocabulary for weak students, and logic and expression improvement for advanced students<sup>[11]</sup>.

## **3.3. Strengthen teachers’ role transformation and improve human-machine collaboration ability**

As the implementer of integrating GAI into college English teaching, teachers should timely transform their traditional roles and improve human-machine collaboration capabilities.

### **3.3.1. Establish the concept of human-machine collaborative teaching**

Teachers should adjust teaching concepts and methods to build a new education ecology. They need to participate in training and seminars, correctly understand the advantages and scenarios of intelligent tools, establish the concept of human-machine collaboration, and clarify the positioning of GAI and cooperation rules<sup>[12]</sup>. Teachers remain dominant in teaching, while GAI assists teaching and learning, and is reasonably integrated into lesson preparation, teaching and evaluation to enhance the pertinence of teaching design.

### **3.3.2. Improve teachers’ technical application and collaboration ability**

To achieve efficient collaboration, teachers should go beyond simple software operation and improve AI literacy and application skills. They should recognize the limitations of GAI-generated content, master precise prompting, and screen valuable information to support teaching design. In practice, teachers should

proficiently operate mainstream GAI tools, learn to cooperate with AI, and improve the level of human-machine collaborative teaching for efficient preparation and precise instruction <sup>[13]</sup>.

### **3.4. Reconstruct the teaching evaluation system to adapt to integrated development**

The backward teaching evaluation system can hardly meet the needs of integrating GAI and college English, so it is necessary to reconstruct a diversified, comprehensive and scientific system.

#### **3.4.1. Construct diversified evaluation content**

Break through the limitations of traditional evaluation and build a content system covering language knowledge, application ability, critical thinking, cross-cultural communication, autonomous learning ability and AI literacy <sup>[14]</sup>. Evaluation focuses on both written scores and oral, writing and translation abilities; both knowledge mastery and thinking competence. Meanwhile, students' ability to use GAI and screen-generated content is included to guide rational use of intelligent tools <sup>[15]</sup>.

#### **3.4.2. Improve diversified evaluation subjects and methods**

Construct an evaluation system of “intelligent evaluation + teacher evaluation + self-evaluation + peer evaluation” to ensure objectivity and comprehensiveness. AI evaluates basic knowledge, homework completion and language accuracy, generating detailed feedback. Teachers evaluate thinking ability, comprehensive literacy and learning attitude with targeted comments. Students conduct self and peer evaluation on the learning process, attitude and progress to enhance reflection. Combining process and summative evaluation, data on the learning process are collected and analyzed to fully reflect students' progress and support teaching optimization.

## **4. Conclusion**

In summary, promoting the integration of GAI and college English teaching is an inevitable requirement of educational digital transformation and an important direction of college English teaching reform. Therefore, teachers should keep up with the development trend of AI, correctly understand the advantages and risks of GAI, adhere to the concept of “technology serves people, education prioritizes nurturing”, and give full play to GAI's strengths in data processing, resource development and personalized guidance through reconstructing teaching models, innovating integration paths and optimizing teaching evaluation. By enriching English teaching resources, building a human-machine interactive and collaborative teaching ecology, and realizing the innovation of personalized teaching mode, we can cultivate students' language ability, thinking ability and comprehensive quality, and boost the high-quality development of college English education.

## **Disclosure statement**

The author declares no conflict of interest.

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