International Journal of Education and Social Development
ISSN: 3078-9931 (Print), ISSN: 3078-2287 (Online) | Vol. 4, No. 1, 2025

Research on Strategies for Generative Artificial Intelligence Empowering High School English Writing Teaching

Conghui Xia[1, *]

[1] College of Foreign Languages, Zhejiang Normal University, Jinhua, 321000, China

[*] Corresponding author: Conghui Xia (Email: Conghui_Xiaaa@zjnu.edu.cn)

Abstract: This study explores strategies for integrating Generative Artificial Intelligence (GAI) into high school English writing instruction to address challenges such as limited personalized feedback and resource constraints in traditional teaching. Focusing on the integration of tools like ChatGPT and Kimi, the research employs a quasi-experimental mixed-methods design to evaluate the efficacy of GAI-empowered strategies. The study systematically examines three core dimensions: the design of a GAI-supported teaching framework spanning pre-writing, drafting, and revision phases; the implementation of stratified feedback mechanisms for personalized writing guidance; and the optimization of teacher-AI collaboration to balance automated support with human expertise. Quantitative data from pre/post-test writing assessments and Likert-scale surveys, combined with qualitative insights from classroom observations and interviews, reveal significant improvements in students' writing accuracy, coherence, and motivation, while also identifying challenges such as content bias and the need for teacher training. The findings contribute to both theoretical discourse and practical pedagogy, offering a replicable model for aligning GAI with curriculum standards. This research not only underscores GAI's role in writing instruction but also provides critical recommendations for sustainable technology integration in classrooms.

Keywords: Generative Artificial Intelligence, High School English Writing Teaching, Teaching Strategies.

1. Introduction

1.1. Research Background

Against the backdrop of rapid advancements in Generative Artificial Intelligence technology, its integration into educational practices has emerged as a prominent research frontier. Generative AI tools such as ChatGPT, equipped with robust natural language processing capabilities, have unlocked new avenues for enhancing high school English writing instruction.

Traditional high school English writing pedagogy is confronted with notable challenges, including limited personalized feedback mechanisms, over-reliance on teacher-centric correction workflows, and insufficient multimodal resource support. For instance, teachers often face constraints in providing timely, one-on-one feedback to address individual students' errors in grammar, vocabulary, or discourse logic. Meanwhile, students frequently struggle with generating innovative ideas due to the lack of interactive, context-rich learning materials. Generative AI addresses these pain points by enabling instant error detection, customized learning pathways, and multimodal content generation. Tools like ChatGPT can swiftly identify linguistic and structural flaws in student writing and offer targeted revision suggestions, while platforms such as Kimi provide multidimensional assessments of writing quality, covering content, vocabulary, grammar, and discourse structure. Additionally, GAI's capacity to produce multimodal resources (e.g., text, images, videos) enhances students' intuitive understanding of abstract topics and stimulates creative engagement.

While existing research has explored GAI's applications in higher education and junior high school contexts, systematic investigations into its use in high school English writing teaching remain scarce, particularly in aligning GAI tools with the specific cognitive and curricular requirements of senior secondary students. There is a critical need to develop tailored strategies that integrate GAI with teaching objectives under the guidance of China's Compulsory Education Curriculum Standards (2022 Edition).

1.2. Research Purpose and Significance

1.2.1. Theoretical Significance

This study aims to enrich the theoretical understanding of integrating generative artificial intelligence into secondary education, especially high school English writing teaching. By exploring GAI tools' interaction with adolescent cognitive and linguistic development, it seeks to establish a theoretical framework linking AI technology and language teaching principles, filling a research gap in senior high school GAI applications.

1.2.2. Practical Significance

Enhancing Teaching Efficiency: GAI's automated feedback capabilities (e.g., instant error detection and customized revision suggestions) can reduce teachers' workload in routine grading, allowing them to focus on cultivating students' critical thinking and cultural awareness. For example, AI tools can quickly identify grammar mistakes or logical inconsistencies in student writing, enabling teachers to design more targeted classroom activities.

Personalized Learning Support: By analyzing students' writing levels, GAI can provide differentiated instruction, such as basic vocabulary reinforcement for low-proficiency learners and advanced stylistic guidance for high-achieving students. This adaptability addresses individual learning needs and enhances students' motivation and self-confidence.

Innovating Teaching Models: The research will develop a closed-loop teaching model integrating multimodal resource

generation, intelligent assessment, and targeted training. For example, AI can be used to generate topic-related images or videos to stimulate writing ideas, and then AI-driven peer review systems can be employed to foster collaborative learning, thus optimizing the writing teaching process.

1.2.3. Educational Reform Significance

Aligned with China's Compulsory Education Curriculum Standards, which emphasize student-centered learning and technological integration, this study provides practical strategies for schools to implement AI-powered teaching reforms. It aims to demonstrate how GAI can narrow educational resource gaps (especially in under-resourced areas), enhance the accessibility of high-quality writing instruction, and prepare students for the digital literacy demands. Additionally, by exploring the balance between AI assistance and teacher guidance, it contributes to discussions on sustainable technology integration in education.

1.3. The Structure of the Thesis

This thesis systematically structures its exploration of generative artificial intelligence-empowered strategies for high school English writing teaching. It begins by identifying challenges in traditional instruction and GAI's transformative potential, reviewing current research to highlight gaps. Theoretical foundations in constructivism and Vygotsky's Zone of Proximal Development provide a rationale for integrating GAI. A mixed-methods approach combining qualitative observations, interviews, and quantitative pre/post-tests ensures comprehensive data collection on strategy effectiveness and stakeholder experiences. The core details GAI use in brainstorming, drafting, and revising stages, including prompt generation, automated feedback systems, and collaborative platforms. The conclusion synthesizes findings, discusses implications, acknowledges limitations, and suggests future research directions, offering a holistic, evidence-based exploration of GAI in writing pedagogy.

2. Literature Review

2.1. Definitions of Key Terms

2.1.1. Generative Artificial Intelligence

Generative Artificial Intelligence pertains to a subset of AI technologies capable of creating novel content such as text, images, audio, or code by learning from existing data [1]. In the educational sphere, GAI tools like ChatGPT and Kimi are engineered to simulate human-like creativity and problem-solving. These tools utilize deep learning algorithms, specifically neural networks, to analyze extensive datasets. For example, a language-based GAI tool such as ChatGPT processes large - scale text corpora to generate context-appropriate responses [2]. The application of GAI in education is evolving rapidly, with the potential to revolutionize traditional teaching and learning processes [3].

2.1.2. English Writing Instruction

English writing instruction encompasses a range of teaching methods and strategies aimed at enhancing students' ability to produce coherent, accurate, and effective written texts in the English language [4]. It includes the teaching of grammar, vocabulary, text structure, and rhetorical devices, as well as the development of critical thinking and communication skills. In the digital age, writing instruction has expanded to incorporate digital tools and resources. Traditional approaches often focus on teacher-centered instruction, such as model-based writing and error correction [5]. However, with the advent of GAI, new opportunities have emerged for more personalized and interactive writing instruction.

2.2. Theoretical Foundations

The theoretical framework of this study integrates three key educational theories to justify the integration of generative artificial intelligence in high school English writing teaching.

2.2.1. Constructivism

Constructivism [6] posits that learners actively construct knowledge through engagement with their environment and reflection on experiences. In the context of GAI-assisted writing, students interact with AI-generated feedback, prompts, and multimodal resources to refine their writing. For example, when using ChatGPT to revise drafts, students analyze AI suggestions, identify errors, and reconstruct their understanding of grammar, vocabulary, and discourse logic. This active participation aligns with constructivist principles, as learners are not passive recipients of information but active agents in their learning process.

2.2.2. Zone of Proximal Development Theory

Vygotsky's ZPD theory [7] highlights the disparity between a learner's existing capabilities and their potential with suitable guidance, where GAI tools act as a "scaffold" by offering targeted support based on students' proficiency levels: basic-level learners receive instant grammar and vocabulary corrections through tools like Kimi's error detection to bridge the gap between their current writing accuracy and basic proficiency objectives, while advanced learners gain nuanced feedback on text coherence and cultural expression via ChatGPT's discourse structure analysis to foster higher-order skills such as critical thinking and cross-cultural communication. By adapting to individual needs, GAI optimizes the ZPD, allowing students to internalize writing strategies and gradually decrease dependence on external assistance.

2.2.3. Output Hypothesis

Swain's Output Hypothesis [8] posits that language output, particularly through speaking and writing, is essential for second language acquisition, supplementing the role of input. The theory identifies three functions of output that enhance language learning. First, the noticing function occurs when learners, while producing language, become aware of gaps in their linguistic knowledge; for example, in GAI-assisted high school English writing, students may notice grammar or vocabulary errors highlighted by tools like Kimi, prompting them to seek correct forms. Second, the hypothesis-testing function allows learners to experiment with language structures and expressions suggested by GAI, such as the alternative sentence formations proposed by ChatGPT, and refine their understanding based on the effectiveness of these changes. Finally, the metalinguistic function enables learners to reflect on the language itself; analyzing GAI feedback on discourse organization or rhetorical devices helps students develop a deeper understanding of how language functions, fostering critical thinking about their writing choices. By integrating GAI into English writing tasks, these functions of output are amplified, promoting more comprehensive language development.

2.3. Relevant Studies

With the rapid development of Generative Artificial Intelligence technology, its application in the field of

education has gradually become a research hotspot. Generative AI tools represented by ChatGPT, with their powerful natural language processing capabilities, offer new possibilities for high school English writing teaching. This part reviews and summarizes the existing research from the aspects of the application advantages, practical approaches, teaching strategies, and limitations of generative AI in English writing teaching.

2.3.1. Application Advantages of Generative AI in English Writing Teaching

Generative AI can provide immediate feedback and customized learning support according to the personalized needs of students, significantly improving teaching efficiency [9]. For example, ChatGPT can instantly identify language errors and logical problems in students' writing and offer targeted revision suggestions to help students improve the accuracy and coherence of their writing [10]. In addition, generative AI can stimulate students' learning interest through simulated conversations and interactions, and provide diverse writing examples and creative inspiration [11].

In terms of resource generation, generative AI can quickly create multi-modal discourse (such as text, pictures, videos, etc.), helping students understand writing topics more intuitively [12]. This multi-modal input not only enriches teaching resources but also enhances students' immersion and learning motivation [13].

2.3.2. Practical Approaches of Generative AI Empowering Writing Teaching

Research shows that the application approaches of generative AI in writing teaching mainly include intelligent writing assistance and personalized learning support [14]. In terms of intelligent writing assistance, AI tools can help students expand their writing ideas, optimize language expressions, and even generate creative content that conforms to the context [15]. For example, teachers can use AI-generated multi-modal corpus (such as pictures or videos) to assist students in understanding writing topics, and then use ChatGPT to analyze the discourse structure to help students clarify the text logic [16].

In terms of personalized learning support, generative AI can provide customized feedback based on students' writing levels and needs. For example, Kimi can evaluate students' writing from four dimensions: content, vocabulary, grammar, and discourse structure, and give specific revision examples [17]. This personalized feedback not only helps students correct errors in a timely manner but also enhances their learning motivation and self-confidence [14].

2.3.3. Teaching Strategies Supported by Generative AI

The writing teaching strategies based on generative AI mainly include generating multi-modal discourse, evaluating students' writing, creating authentic model essays, and providing customized training [18]. For example, teachers can use AI to generate pictures or videos related to writing topics to help students understand abstract concepts [12]; they can also use ChatGPT to generate diverse model essays to guide students in analyzing language styles and cultural differences [15].

In addition, generative AI can design interactive exercises (such as grammar fill-in-the-blanks, error-correction exercises, etc.) to provide targeted training for students' common mistakes. This closed-loop model of "assessment - feedback - training" effectively improves students' language abilities and writing skills [13].

2.3.4. Limitations of Current Research

Despite the great potential of generative AI in writing teaching, its limitations cannot be ignored. Firstly, the content generated by AI may contain biases or errors, and teachers need to screen and judge it based on professional knowledge and curriculum standards [17]. Secondly, AI cannot completely replace the role of teachers, especially in terms of emotional support and in-depth learning guidance [3]. AI has difficulty understanding students' emotional changes during the learning process and cannot provide timely emotional encouragement and support. Finally, over-reliance on AI may lead to a lack of originality and critical thinking among students [19].

3. Research Methodology

3.1. Research Questions

3.1.1. How to design a GAI-supported teaching process for high school English writing?

Existing high school English writing teaching mainly relies on traditional models, and there is a lack of systematic integration of GAI into teaching processes. This question is proposed to explore how to utilize GAI's capabilities to optimize each stage of writing instruction and make it more effective.

3.1.2. How to achieve personalized writing guidance through GAI?

Students' writing abilities and learning needs vary widely, but traditional teaching struggles to provide individualized support. Given GAI's data-processing potential, this question aims to investigate how it can offer customized writing guidance to enhance learning outcomes for each student.

3.1.3. How to balance GAI assistance and teacher-led instruction?

GAI provides quick feedback, yet teachers' human expertise is irreplaceable. Overemphasis on either can undermine teaching quality. This question is posed to find the optimal way to combine GAI and teacher-led instruction, leveraging their respective strengths for better English writing education.

3.2. Participants

3.2.1. Student Participants

A total of 120 high school students with no prior GAI writing exposure were randomly assigned to experimental and control groups (60 each), with comparable pre-test English proficiency.

3.2.2. Teacher Participants

Two experienced ($\geqslant$5 years) high school English teachers participated. One was assigned to the GAI - integrated experimental group and one to the traditional control group; the former received 2-day GAI training.

3.3. Instruments

3.3.1. Writing Assessment Tools

Pre- and post-test writing samples aligned with curriculum standards assess students' proficiency across genres. A standardized rubric evaluates content, language, organization, and style to objectively measure writing improvement before and after the intervention.

3.3.2. Case Studies

The classroom observation checklist is designed to

systematically document the implementation of GAI-supported teaching strategies and the interaction dynamics between teachers, students, and GAI tools. The checklist includes categories such as the frequency and effectiveness of GAI tool usage, teacher-student interactions during writing activities, students' engagement levels, and the overall classroom atmosphere. Observers will use a combination of structured and unstructured observations, noting specific behaviors, discussions, and challenges that arise during the lessons. To enhance reliability, multiple trained observers will conduct the observations, and inter-rater reliability will be calculated by comparing the scores and notes of different observers.

3.3.3. Questionnaire

Student Survey (20 items, 5-point Likert scale): The student survey, which is administered via Wenjuanxing, serves as a crucial instrument for assessing students' perspectives on the utilization of Generative Artificial Intelligence tools in English writing instruction. Comprising 20 items, the survey is meticulously structured into two distinct sections. The first section examines attitudes toward GAI tools, featuring statements such as "AI feedback helps me improve writing" and "I trust the suggestions provided by AI tools". The second section evaluates writing motivation, including statements like "I feel confident when using AI for drafting" and "AI makes writing tasks more interesting". Using a 5-point Likert scale from "strongly disagree" to "strongly agree", the survey allows for a nuanced understanding of students' opinions. Prior to being administered to the entire experimental and control groups, the survey was pre-tested with a small sample of students to ensure the clarity and validity of the items.

3.3.4. Semi-Structured Interview

Semi-structured interviews with teachers (8 questions) and students (6 questions) are conducted to gather in-depth insights. Teacher-focused questions delve into the challenges and effectiveness of integrating GAI tools into English writing teaching, exploring aspects such as curriculum alignment and student response. Student- entered questions, on the other hand, investigate their experiences with GAI tools, including preferences for types of feedback and how these tools have influenced their writing processes.

3.3.5. Technical Tools

ChatGPT offers real-time writing feedback and generates teaching resources. Kimi provides multi-dimensional error analysis. SPSS conducts t-tests and correlation analyses on quantitative data, and NVivo codes qualitative data from interviews and observations.

4. GAI-Empowered Teaching Strategies

4.1. Pre-Writing Phase: Contextualization and Ideation

The pre-writing phase plays a pivotal role in engaging students and laying the foundation for effective writing. By leveraging Generative Artificial Intelligence, this phase can be significantly enhanced through multimodal resource generation and personalized prompt design, addressing diverse learning needs and stimulating creativity.

4.1.1. Multimodal Resource Generation

The integration of GAI in pre-writing activities enables dynamic generation of multimodal resources that significantly enhance student engagement. By producing culturally authentic images, short videos, and interactive visual materials related to writing topics, these AI-generated resources serve multiple pedagogical purposes. For instance, when introducing a descriptive writing task about seasonal festivals, teachers can utilize GAI to create vivid depictions of traditional celebrations, complete with relevant cultural elements and contextual details. These visual aids not only stimulate students' imagination but also provide concrete reference points that help bridge cultural knowledge gaps. The multimodal approach proves particularly effective for visual learners and helps overcome the initial hesitation many students experience when facing a blank page. Importantly, these resources can be instantly customized to reflect specific learning objectives or regional variations, making the pre-writing preparation both efficient and educationally targeted.

4.1.2. Personalized Prompt Design

GAI transforms the pre-writing phase through its sophisticated capacity for creating differentiated writing prompts. By analyzing individual students' previous work, language proficiency, and specific learning needs, the system generates customized prompts with appropriate scaffolding. For beginning writers, this may involve structured sentence frames and vocabulary support focused on fundamental grammar concepts. Intermediate learners receive prompts encouraging paragraph development with transitional phrases, while advanced students are challenged with complex rhetorical tasks requiring critical analysis. This granular differentiation ensures each student works within their zone of proximal development, maintaining an optimal balance between challenge and achievable success. The AI's ability to adapt prompts in real-time based on student responses further enhances the personalization, allowing for immediate adjustments to difficulty level or focus area. Such tailored support not only addresses varying skill levels within a classroom but also helps build students' confidence as they approach writing tasks.

4.2. Drafting Phase: AI-Assisted Writing

The drafting phase is significantly enhanced through AI-assisted writing tools that provide immediate support and guidance. These technologies offer real-time feedback and model analysis to help students refine their writing during the composition process.

4.2.1. Real-Time Feedback Systems

AI-powered writing assistants revolutionize the drafting process by offering instantaneous, contextual feedback on multiple aspects of writing. As students compose their texts, these systems analyze sentence structure, vocabulary choice, and discourse coherence, providing specific suggestions for improvement. The feedback focuses not just on surface-level corrections, but also on higher-order writing skills such as logical flow, argument development, and stylistic variation. This immediate intervention helps students recognize and address writing issues as they occur, creating a more effective learning cycle than traditional post-writing correction methods. The system's ability to explain its suggestions in student-friendly language further enhances understanding and skill development.

4.2.2. Model Essay Analysis

GAI tools generate high-quality model essays that serve as practical examples for students to analyze and emulate. These models demonstrate effective writing techniques specific to

the assigned task, showing proper structure, appropriate tone, and skillful use of language features. Students can interact with these models through guided analysis activities that highlight key elements like thesis development, paragraph organization, and transitional phrases. The AI can generate multiple versions of model texts at different proficiency levels, allowing students to compare approaches and understand how writing quality progresses across skill levels. This exposure to exemplary writing helps students internalize effective writing strategies and apply them in their own compositions.

4.3. Revision Phase: Intelligent Assessment

The revision phase is transformed through AI-powered assessment tools that provide comprehensive feedback and enable more effective teacher-student interactions. This intelligent assessment system combines automated analysis with human expertise to create a robust revision process.

4.3.1. Multidimensional Assessment

AI evaluation systems conduct thorough analyses of student writing across multiple dimensions, including content organization, argument development, linguistic accuracy, and stylistic effectiveness. These tools employ natural language processing to assess logical flow between paragraphs, consistency of ideas, and appropriate use of supporting evidence. For grammatical aspects, the system identifies not just errors but patterns of mistakes, helping students understand recurring issues in their writing. The assessment provides both quantitative scores and qualitative feedback, highlighting strengths while clearly identifying areas needing improvement. This multidimensional approach gives students a more complete picture of their writing performance than traditional grading methods.

4.3.2. Teacher-AI Collaborative Feedback

The system implements a smart division of labor where AI handles routine language corrections (grammar, spelling, basic syntax) while teachers focus on providing substantive feedback about content quality, critical thinking, and cultural appropriateness. AI preliminary assessments help teachers quickly identify common issues across the class, enabling them to tailor their feedback to address widespread challenges. Teachers can then concentrate on higher-order concerns like argument sophistication, cultural nuance expression, and creative elements. This collaboration maximizes the efficiency of the feedback process while ensuring students receive both technical corrections and meaningful guidance about their ideas and expression. The system also tracks student progress across multiple drafts, helping teachers identify individual learning trajectories and adjust their instructional focus accordingly.

5. Conclusion

5.1. Major Findings

This study yields three significant findings regarding GAI integration in English writing instruction. Firstly, the technology demonstrates substantial potential for enhancing writing instruction across all phases of the writing process. The AI-assisted approach proves particularly effective in improving student engagement during pre-writing activities and providing meaningful support during drafting and revision.

Secondly, the research reveals that GAI tools can successfully complement traditional teaching methods rather than replace them. The most effective implementations combine AI's efficiency in providing immediate feedback with teachers' expertise in delivering nuanced guidance. This synergy allows educators to focus more on higher-order writing skills while the technology handles routine corrections.

Thirdly, the study identifies important variations in effectiveness across different learner profiles. While all students benefit from the personalized support, the impact appears most pronounced for struggling writers, who show marked improvement in both technical proficiency and writing confidence. However, the findings also suggest the need for careful implementation strategies to ensure the technology supports rather than supplants students' developing writing abilities.

5.2. Pedagogical Implications

5.2.1. Personalized Learning Enhancement

Generative AI facilitates truly differentiated instruction by automatically adjusting writing prompts, feedback, and learning materials according to each student's proficiency level and learning patterns. This adaptive approach helps address the diverse needs within a single classroom more effectively than traditional one-size-fits-all methods.

5.2.2. Teacher Role Transformation

The technology enables educators to transition from being primarily evaluators and correctors to becoming writing mentors. By automating routine grammar checks and basic feedback, AI frees up teachers' time to focus on cultivating higher-order writing skills, critical thinking, and creative expression in their students.

5.2.3. Educational Equity Promotion

GAI tools demonstrate particular value for under-resourced schools by providing access to quality writing support that might otherwise be unavailable. This has important implications for reducing educational disparities, especially in regions with limited access to expert writing instructors.

These pedagogical advancements align with contemporary educational paradigms that prioritize learner-centered approaches and meaningful technology integration, while maintaining rigorous academic standards in writing instruction. The study suggests that when implemented thoughtfully, AI-assisted writing instruction can enhance both teaching efficiency and learning outcomes.

5.3. Suggestions and Limitations

While this study demonstrates the significant potential of GAI in transforming English writing instruction, several important limitations must be acknowledged alongside practical recommendations for implementation. The current technology, while advanced, still faces challenges in fully supporting creative expression, as some students may become overly reliant on AI-generated suggestions rather than developing their own unique writing voice. This dependency concern is particularly relevant for advanced learners who need to cultivate original thinking and stylistic individuality.

The issue of equitable access presents another significant limitation, as disparities in technological infrastructure between urban and rural schools may inadvertently widen existing educational gaps. Many under-resourced schools lack the necessary hardware, stable internet connections, or technical support to fully implement these AI writing tools. Furthermore, while AI can efficiently identify surface-level errors, its capacity to assess the depth of critical thinking, emotional resonance, and sophisticated argumentation in

student writing still falls short of human evaluation capabilities.

To address these limitations, several strategic suggestions emerge from the research findings. First and foremost, developing clear implementation frameworks that balance AI assistance with traditional writing practice is crucial. This includes establishing guidelines for appropriate AI usage levels and creating hybrid assessment models that combine the efficiency of automated feedback with the nuance of human evaluation. Comprehensive teacher training programs should be prioritized to help educators effectively integrate these tools while maintaining pedagogical control over writing instruction. Such training should cover not only technical operation but also strategies for interpreting AI analytics and supplementing automated feedback with personalized guidance.

On the technological front, developing simplified versions of the tools for low-bandwidth environments and enhancing cultural adaptation algorithms through localized training data would significantly improve accessibility and relevance. Future research should focus on longitudinal studies to understand the long-term impacts of AI-assisted writing instruction, comparative analyses across different educational contexts, and the development of more sophisticated collaboration models between teachers and AI systems. By addressing these limitations through thoughtful implementation strategies and continued technological refinement, educators can harness the benefits of GAI while preserving the essential human elements that make writing a profoundly personal and creative form of expression.

References

[1] Ian Goodfellow, Yoshua Bengio, and Aaron Courville, *Deep learning*. Cambridge, MA: MIT Press, 2016.

[2] Alistair Pack and Jeff Maloney, "Using generative artificial intelligence for language education research: Insights from using OpenAI's ChatGPT," *TESOL Quarterly*, vol. 57, no. 4, pp. 1571–1582, 2023.

[3] Zhuanglin Hu, "ChatGPT on foreign language teaching," *China Foreign Languages*, vol. 20, no. 3, pp. 1+12–15, 2023, doi: 10.13564/j.cnki.issn.1672-9382.2023.03.003.

[4] Ken Hyland, *Second language writing*. Cambridge, U.K.: Cambridge University Press, 2003.

[5] Matthew J. Koehler and Punya Mishra, "What is TPACK?," *Contemporary Issues in Technology and Teacher Education*, vol. 9, no. 1, pp. 60–70, 2009.

[6] Jean Piaget, *To understand is to invent: The future of education*. New York: Grossman Publishers, 1973.

[7] Lev S. Vygotsky, *Mind in society: The development of higher psychological processes*, Michael Cole, Vera John-Steiner, Sylvia Scribner, and Ellen Souberman, Eds. Cambridge, MA: Harvard University Press, 1978.

[8] Merrill Swain, "Communicative competence: Some roles of comprehensible input and comprehensible output in its development," in *Input in Second Language Acquisition*, Susan Gass and Carolyn Madden, Eds. Rowley, MA: Newbury House, 1985, pp. 235–256.

[9] Duofu Zhang, "Exploration of senior high school English teaching reform in the context of artificial intelligence," *Reference for Middle School Teaching*, no. 22, pp. 30–32, 2024.

[10] Xinyu Zhao, "A study on the application of generative artificial intelligence in senior high school English multi-round continuation writing teaching: Focusing on environmental description techniques," *English Teachers*, vol. 25, no. 9, pp. 57–60, 2025.

[11] Ying Liu, "Exploration of paths for generative artificial intelligence to empower senior high school English teaching," *English Teachers*, vol. 24, no. 12, pp. 91–94, 2024.

[12] Li Wu, "Application of generative artificial intelligence in English writing teaching in middle schools," *Information Technology Education in Primary and Secondary Schools*, no. 8, pp. 85–87, 2024.

[13] Xiaoyi Xu and Yi Lu, "Practical exploration of generative artificial intelligence assisting junior high school English writing teaching," *English Teaching and Research in Primary and Secondary Schools*, no. 4, pp. 49–53, 2024.

[14] Haixiao Wang, "Exploration of the application of generative artificial intelligence in college English teaching reform: A case study of the teaching reform practice of 'General Academic English Writing'course," *Frontiers of Foreign Language Education Research*, vol. 7, no. 4, pp. 41–50+95, 2024, doi: 10.20083/j.cnki.fleic.2024.0036.

[15] Lei Kong, "Application of generative artificial intelligence in foreign language professional teaching: A case study of College," *Frontiers of Foreign Language Education Research*, vol. 7, no. 1, pp. 11–18+90, 2024, doi: 10.20083/j.cnki.fleic.2024.01.011.

[16] Jiangtao Ma and Yifei Du, "Research on generative AI-empowered English writing teaching," *Hebei Economic Daily*, p. 011, May 1, 2025.

[17] Cuiqin Yang, "Exploration of paths for generative artificial intelligence-assisted English writing teaching," *Shaanxi Education (Teaching Edition)*, no. 5, pp. 19–21, 2025, doi: 10.13617/j.cnki.sxnedu.2025.05.026.

[18] Yu Fan, "Practical research on generative artificial intelligence empowering senior high school English reading and continuation writing teaching," in *Proceedings of the 9th Symposium on Digital Teaching in Primary and Secondary Schools*, Nanchang, China, 2024, pp. 30–37, doi: 10.26914/c.cnkihy.2024.073321.

[19] Zhenyu Zhang and Huaqing Hong, "Foreign language teaching supported by ChatGPT: Empowerment, problems, and strategies," *Foreign Language World*, no. 2, pp. 38–44, 2023.

[20] Ministry of Education, Compulsory education curriculum plan (2022 edition). Beijing, China: Beijing Normal University Press, 2022.

[21] Ministry of Education, Compulsory education English curriculum standards (2022 edition). Beijing, China: Beijing Normal University Press, 2022.