



GENERATIVE AI IN WRITING INSTRUCTION: OPPORTUNITIES, CHALLENGES, AND FUTURE DIRECTIONS IN ENGLISH LANGUAGE TEACHING

A. Pradheepa¹ Dr K. Gurusamy² N. Polraj alias Goutham³

¹Research Scholar, Department of English, School of Liberal Arts and Special Education, Kalasalingam Academy of Research and Education, Krishnankovil, 626126, Virudhunagar, Tamil Nadu.

^{2*}Associate Professor, Department of English, School of Liberal Arts and Special Education, Kalasalingam Academy of Research and Education, Krishnankovil, 626126, Virudhunagar, Tamil Nadu.

³Research Scholar, Department of English, School of Liberal Arts and Special Education, Kalasalingam Academy of Research and Education, Krishnankovil, 626126, Virudhunagar, Tamil Nadu.

Abstract: The rapid advancement of Generative Artificial Intelligence (GenAI) has significantly transformed English Language Teaching (ELT), particularly in the area of writing instruction. AI-powered tools such as ChatGPT, Google Gemini, Microsoft Copilot, and Grammarly have introduced new opportunities for supporting learners throughout various stages of the writing process, including idea generation, grammar correction, revision, and academic writing assistance. Despite these pedagogical benefits, concerns regarding academic integrity, ethical use, overreliance on AI, critical thinking, teacher readiness, data privacy, and equitable access continue to influence the adoption of these technologies in educational settings. This narrative review synthesizes recent literature published between 2020 and 2026 to examine the applications, opportunities, and challenges of Generative AI in writing instruction within English Language Teaching. The review is guided by the Technological Pedagogical Content Knowledge (TPACK) framework, which provides a theoretical lens for understanding the effective integration of AI technologies into writing pedagogy. The findings indicate that Generative AI can enhance writing quality, learner autonomy, personalized learning, and formative feedback when implemented within sound pedagogical practices. However, responsible integration requires comprehensive AI literacy, institutional policies, ethical governance, curriculum redesign, and continuous professional development for educators. The review further identifies several research gaps, including the need for longitudinal studies, comparative evaluations of emerging AI platforms, and investigations across diverse educational and cultural contexts. Overall, this review contributes to the growing body of literature by providing a comprehensive synthesis of current evidence and offering practical implications for educators, researchers, curriculum developers, and policymakers seeking to integrate Generative AI responsibly into ELT writing instruction.

Keywords: Generative Artificial Intelligence, English Language Teaching, Writing Instruction, ChatGPT, TPACK, Artificial Intelligence, Academic Writing, AI Literacy, Educational Technology, Writing Pedagogy.

1. Introduction

The rapid development of Artificial Intelligence (AI) has significantly transformed various sectors, including education. Among recent technological developments, Generative Artificial Intelligence (GenAI), particularly Large Language models such as ChatGPT, have attracted considerable attention due to their ability to generate human-like text and support various educational tasks (Kasneci et al.,2023; Tlili et al.,2023).

In the field of English Language Teaching (ELT), Generative AI has emerged as a promising tool for enhancing language learning and instruction. Studies suggest that AI-powered applications can support learners through personalized feedback, language practice, and content generation, and adaptive learning experiences (Kohnke et al.,2023; Lo,2023).

Reading and writing are among the most important language skills in ELT. Generative AI tools can assist students in developing writing proficiency through feedback and revision supports, and idea generation, while also communicating reading comprehension through text simplification, summarization, and vocabulary assistance (Yan,2023; Wang & Han,2024)

Despite these benefits, concerns have been raised regarding academic integrity, overreliance on AI, ethical issues, and the potential impact of AI on learners' critical thinking and independent learning abilities (Cotton et al., 2023; Perkins, 2023). These challenges have generated significant debate among educators and researchers regarding the integration of the responsibility of Generative AI in language education.

Although a growing body of research has examined AI applications in education, existing studies often focus on AI in ELT broadly or investigate individual tools and specific learning contexts. Limited attention has been devoted to synthesizing evidence on the role of Generative AI specifically in reading and writing instruction. Therefore, this review aims to examine the applications, opportunities, challenges, and future directions of Generative AI in reading and writing instruction within English Language Teaching through the lens of the TPACK framework.

2. Theoretical Framework: Technological Pedagogical Content Knowledge (TPACK)

The integration of emerging technologies into educational settings has increased the need for frameworks that guide teachers in effectively combining technology with pedagogy and subject content. The Technological Pedagogical Content Knowledge (TPACK) framework provides a comprehensive model for understanding how educators can integrate technology into teaching and learning processes. Originally developed by Mishra and Koehler (2006), the framework has been widely applied in technology-enhanced learning environments and remains relevant in the context of Generative Artificial Intelligence (AI).

The TPACK framework consists of three core domains of teacher knowledge: Content Knowledge (CK), Pedagogical Knowledge (PK), and Technological Knowledge (TK). Content Knowledge refers to teachers' understanding of the subject matter they teach. In English Language Teaching (ELT), this includes knowledge of language structures, writing conventions, vocabulary, grammar, and composition. Pedagogical Knowledge involves instructional strategies, classroom management, assessment methods, and approaches that facilitate effective learning. Technological Knowledge refers to the ability to understand, evaluate, and utilize technological tools for educational purposes (Koehler et al., 2013).

The interaction among these three domains generates additional forms of knowledge, including Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK), and Technological Pedagogical Knowledge (TPK). The intersection of all three domains forms Technological Pedagogical Content Knowledge (TPACK), which represents the comprehensive knowledge required for meaningful technology integration in educational contexts (Koehler et al., 2013). The framework emphasizes that effective technology use is not solely dependent on technological competence but also on the ability to align technology with pedagogical goals and subject content.

The growing adoption of Generative AI tools has increased the relevance of the TPACK framework in ELT. Applications such as ChatGPT, Grammarly, Gemini, and other AI-powered writing assistants have transformed how students approach writing tasks. These tools can generate ideas, provide instant feedback, improve grammatical accuracy, assist in drafting essays, and support revision processes. However, the educational value of these technologies depends on how effectively teachers integrate them into instructional practices rather than merely introducing them as technological innovations (Kohnke et al., 2023).

Within writing instruction, Technological Knowledge enables teachers to understand the capabilities and limitations of Generative AI tools. Pedagogical Knowledge allows educators to design learning activities that encourage critical thinking, creativity, and learner engagement. Content Knowledge ensures that writing instruction remains aligned with language-learning objectives and academic standards. The integration of these three forms of knowledge enables teachers to employ Generative AI as a pedagogical resource that supports writing development while maintaining educational integrity.

Recent studies have highlighted both the opportunities and challenges associated with Generative AI in educational settings. Generative AI can provide personalized feedback, facilitate learner autonomy, and support the writing process through adaptive assistance. At the same time, concerns have been raised regarding overreliance on AI, academic integrity, ethical considerations, and the accuracy of AI-generated content (Kasneji et al., 2023; Lo, 2023). The TPACK framework offers a useful lens for examining these issues because it emphasizes the importance of balancing technological innovation with pedagogical effectiveness and content relevance.

In the context of English language writing instruction, the TPACK framework provides a theoretical foundation for understanding how Generative AI can be integrated responsibly and effectively. It highlights the role of teachers as facilitators who must make informed decisions about when, why, and how AI tools should be used to enhance learning outcomes. Consequently, the framework serves as an appropriate guide for examining the applications, opportunities, challenges, and future directions of Generative AI in ELT writing instruction.

3. Applications of Generative AI in Writing Instruction

The emergence of Generative Artificial Intelligence (GenAI) has significantly transformed writing instruction in English Language Teaching (ELT). Tools such as ChatGPT, Gemini, Copilot, and other large language model-based applications have introduced new possibilities for supporting learners throughout the writing process. Recent research suggests that these technologies can facilitate grammar development, feedback provision, idea generation, academic writing assistance, and personalized learning experiences. Consequently, Generative AI has become an increasingly influential component of technology-enhanced writing pedagogy. (Lee et al., 2025; Webb, 2025).

3.1 Grammar and Language Support

One of the most common applications of Generative AI in writing instruction is grammar and language support. AI-powered writing tools assist learners in identifying grammatical errors, improving sentence structures, refining vocabulary usage, and enhancing linguistic accuracy. Automated writing assistance enables students to receive immediate corrective feedback, which supports independent revision and language development. Evidence from ESL and EFL contexts indicates that AI-assisted writing tools contribute to improvements in writing accuracy, coherence, and revision practices, particularly among second-language learners. Furthermore, these systems function as cognitive scaffolds that encourage learners to engage more actively in language production and self-editing processes. (Mahapatra, 2024; Artificial Intelligence in ESL/EFL Education, 2025).

3.2 Writing Feedback and Revision

Feedback plays a crucial role in the development of writing skills. Traditionally, individualized feedback has depended heavily on teacher availability and workload. Generative AI addresses this challenge by providing immediate and personalized feedback on grammar, coherence, organization, and style. Recent studies have demonstrated that ChatGPT can function as an effective formative feedback tool, enabling learners to revise their work multiple times and engage in iterative writing processes. Research comparing AI-generated and hybrid feedback approaches also suggests that AI-supported feedback can significantly improve writing quality when combined with teacher guidance. These findings highlight the potential of Generative AI to complement traditional feedback mechanisms and enhance revision practices. (Mahapatra, 2024; Zhang, 2025).

3.3 Idea Generation and Pre-Writing Activities

The pre-writing stage is often challenging for learners who struggle to generate ideas, formulate arguments, or organize their thoughts. Generative AI tools can facilitate brainstorming by suggesting topics, generating outlines, proposing thesis statements, and offering alternative perspectives on a given issue. Such support reduces cognitive barriers during the planning stage and encourages learners to engage

more confidently in writing tasks. Research involving EFL learners indicates that students frequently employ AI tools as brainstorming partners, using them to develop ideas and structure writing tasks more effectively. Consequently, Generative AI has become a valuable resource for supporting creativity and planning in writing instruction. (Lee, 2025; Xiao, 2025).

3.4 Academic Writing Assistance

Generative AI has gained considerable attention in academic writing instruction. AI-powered systems assist learners with essay organization, argument development, paraphrasing, summarization, and language refinement. These capabilities are particularly beneficial for learners who encounter difficulties with academic discourse conventions and formal writing styles. Recent studies have reported that Generative AI contributes to improvements in cohesion, clarity, precision, and overall writing quality. Additionally, AI-supported academic writing environments have been found to increase learner motivation and autonomy while facilitating the production of more structured and coherent texts. However, researchers also emphasize the importance of critical engagement with AI-generated content and the maintenance of academic integrity. (Zamorano, 2025; Generative AI in Academic Writing: A Systematic Review, 2025).

3.5 Personalized Writing Support

A significant advantage of Generative AI is its ability to provide personalized learning experiences. Unlike traditional classroom instruction, AI systems can adapt their responses to individual learner needs, proficiency levels, and writing objectives. Personalized feedback enables learners to focus on specific areas for improvement while progressing at their own pace. Studies have shown that AI-assisted writing environments promote learner autonomy, increase motivation, and support self-regulated learning. Through individualized guidance, Generative AI facilitates more learner-centered approaches to writing instruction and helps address diverse learning needs within ELT classrooms. (Ibrahim, 2024; Zamorano, 2025).

3.6 Collaborative and Interactive Writing Practices

Generative AI has introduced new possibilities for collaborative and interactive writing. Students increasingly interact with AI systems as writing partners that provide suggestions, alternative expressions, and content development support. Research examining student–ChatGPT interactions in EFL writing contexts reveals that learners frequently engage in dialogue-based revision processes, using AI-generated responses to refine and improve their writing. These interactions encourage reflection, metacognitive awareness, and active participation in the writing process. Rather than replacing human creativity, AI functions as a supportive collaborator that enhances idea development and revision activities. (Han et al., 2023; Woo et al., 2025).

Overall, the literature demonstrates that Generative AI supports multiple dimensions of writing instruction, including grammar development, feedback provision, idea generation, academic writing assistance, personalized learning, and collaborative writing practices. These applications suggest that Generative AI has the potential to enhance writing instruction significantly when integrated through appropriate pedagogical frameworks such as TPACK. Nevertheless, effective implementation requires careful consideration of pedagogical goals, ethical issues, and responsible AI use in language education.

4. Opportunities of Generative AI in Writing Instruction

The emergence of Generative Artificial Intelligence (GenAI) has created significant opportunities for enhancing writing instruction in English Language Teaching (ELT). Recent advancements in large language models and AI-powered writing assistants have enabled learners to access personalized support, immediate feedback, and interactive learning experiences that were previously difficult to provide consistently in traditional classroom settings. As educational institutions increasingly integrate AI technologies into language learning environments, researchers have highlighted their potential to improve writing proficiency, learner engagement, and instructional effectiveness. The opportunities associated with Generative AI extend beyond simple language correction, encompassing cognitive, pedagogical, and motivational dimensions of writing development.

4.1 Personalized Learning and Adaptive Support

One of the most significant opportunities offered by Generative AI is its ability to provide personalized learning experiences. Unlike conventional writing instruction, which often follows a standardized approach, AI systems can tailor feedback and recommendations according to learners' proficiency levels, learning needs, and writing objectives. This adaptive support enables students to focus on their individual weaknesses while progressing at their own pace. Chen (2025) reported that lower-proficiency EFL learners particularly benefited from AI-assisted writing environments, demonstrating improvements in both writing performance and confidence. Similarly, Ibrahim (2024) emphasized that AI-driven personalization promotes learner-centered instruction by addressing individual learning gaps and providing customized writing assistance.

4.2 Enhancement of Writing Quality

Generative AI has demonstrated considerable potential for improving the overall quality of student writing. AI-powered tools assist learners in refining grammar, vocabulary, sentence structure, coherence, and organization. Through continuous interaction with AI systems, students gain opportunities to revise and improve their texts more effectively. Alpar (2025) found that tools such as ChatGPT-4, Google Gemini, and Microsoft Copilot contributed positively to writing development by providing diverse forms of linguistic and structural support. Likewise, Mekheimer (2025) reported that AI-assisted feedback significantly enhanced writing proficiency and revision quality among EFL learners. These findings suggest that Generative AI can function as an effective supplementary resource for improving writing outcomes.

4.3 Immediate Feedback and Revision Opportunities

Effective writing instruction relies heavily on timely and constructive feedback. However, providing individualized feedback remains a challenge for many educators due to large class sizes and limited instructional time. Generative AI addresses this limitation by offering immediate responses to learner writing. Students can receive feedback on grammar, content organization, argument development, and language use within seconds. Zhang (2025) demonstrated that ChatGPT-mediated feedback activities encouraged more frequent revision practices and improved learner engagement with the writing process. The availability of instant feedback supports iterative learning and allows students to identify and address weaknesses more efficiently than traditional delayed feedback mechanisms.

4.4 Increased Learner Autonomy and Self-Regulated Learning

Another important opportunity associated with Generative AI is the promotion of learner autonomy. AI tools enable students to access writing support independently without relying exclusively on teacher intervention. Learners can seek explanations, request feedback, revise drafts, and explore alternative writing strategies at any time. This flexibility encourages self-directed learning and helps students develop self-regulated writing practices. Lee (2025) found that university students frequently used Generative AI tools to monitor their own learning progress and improve their writing independently. Such findings indicate that AI technologies can foster greater responsibility and ownership of the learning process.

4.5 Support for Idea Generation and Creativity

Generating ideas and organizing thoughts are often challenging aspects of the writing process. Generative AI can function as a creative partner by assisting learners during brainstorming and planning activities. AI systems can suggest topics, generate outlines, provide examples, and offer alternative perspectives on a subject. Xiao (2025) observed that AI-assisted writing environments helped learners overcome writer's block and encouraged more creative approaches to writing tasks. By reducing cognitive barriers during the pre-writing stage, Generative AI facilitates idea development and enhances students' confidence in expressing their thoughts effectively.

4.6 Promotion of Inclusive and Accessible Learning Environments

Generative AI also contributes to educational accessibility and inclusion. Students with different language proficiency levels can benefit from adaptive support tailored to their individual needs. AI-powered writing assistants provide opportunities for learners who may require additional linguistic guidance or support outside the classroom. Furthermore, Generative AI enables continuous access to instructional assistance, making writing support available regardless of time and location. Sanz-Tejeda et

al. (2026) argued that AI technologies have the potential to democratize access to writing instruction by offering scalable and accessible learning resources to diverse student populations.

4.7 Transformation of Writing Pedagogy

The integration of Generative AI is not merely enhancing existing instructional practices; it is also reshaping writing pedagogy itself. AI technologies encourage educators to reconsider traditional approaches to writing instruction and explore more collaborative, interactive, and learner-centered models. Rather than serving solely as information providers, teachers increasingly assume the role of facilitators who guide students in critically evaluating and effectively utilizing AI-generated content. This shift aligns with contemporary educational paradigms that emphasize digital literacy, critical thinking, and human-AI collaboration in language learning environments (Webb & Şenaydın, 2025).

Overall, the literature suggests that Generative AI offers substantial opportunities for improving writing instruction in ELT. Through personalized learning, enhanced writing quality, immediate feedback, learner autonomy, creative support, accessibility, and pedagogical innovation, AI technologies have the potential to transform writing education. Nevertheless, the realization of these benefits depends on thoughtful implementation, pedagogical alignment, and responsible use within educational contexts.

5. Challenges of Generative AI in Writing Instruction

The rapid adoption of Generative Artificial Intelligence (GenAI) has transformed writing instruction in English Language Teaching (ELT), providing learners with unprecedented access to intelligent writing assistance. Despite its numerous pedagogical benefits, the increasing reliance on AI-powered writing tools has also generated substantial concerns among educators, researchers, and policymakers. These concerns extend beyond technological limitations and encompass ethical, cognitive, pedagogical, and institutional dimensions. Recent literature suggests that while Generative AI has the potential to improve writing quality and learner engagement, its inappropriate or excessive use may undermine academic integrity, reduce independent learning, and create new challenges for educational systems. Consequently, understanding these limitations is essential for the responsible and sustainable integration of AI into writing instruction.

5.1 Academic Integrity, Ethical Concerns, and Reliability of AI-Generated Content

One of the most widely discussed challenges associated with Generative AI in writing instruction is its impact on academic integrity. The emergence of sophisticated large language models has significantly changed how students approach writing tasks. Rather than serving solely as learning support tools, AI systems are increasingly capable of producing complete essays, reports, reflections, and research summaries that closely resemble human writing. This capability has created uncertainty regarding authorship, originality, and the authenticity of students' written work.

Recent studies argue that Generative AI has blurred the distinction between legitimate learning support and academic misconduct. While AI-assisted brainstorming, grammar correction, and language refinement may contribute positively to writing development, generating complete assignments with minimal student input raises serious concerns regarding plagiarism and intellectual honesty (Cotton et al., 2023; Perkins, 2023). Unlike conventional plagiarism, AI-generated text often produces original wording that cannot be detected using traditional plagiarism detection software, making academic misconduct increasingly difficult to identify.

Another significant ethical issue concerns transparency in AI use. Researchers have emphasized that many educational institutions currently lack consistent policies regarding the acceptable use of Generative AI during writing tasks. Students frequently remain uncertain about whether AI-generated ideas, paraphrased content, or language corrections should be acknowledged within academic assignments. Such ambiguity contributes to inconsistent practices across institutions and increases the likelihood of unintentional academic misconduct (UNESCO, 2023).

The issue of authorship also presents new ethical dilemmas. Academic writing has traditionally been regarded as evidence of learners' individual knowledge, reasoning, and communication skills. However, when AI systems generate substantial portions of written work, determining the true author becomes increasingly complex. Several scholars argue that excessive dependence on AI challenges the fundamental purpose of writing assessment because the submitted work may no longer accurately represent students' own abilities (Bearman & Ajjawi, 2023).

Ethical concerns extend beyond plagiarism to include fairness and equality. Students with unrestricted access to premium AI tools may gain advantages over peers who rely solely on free versions or lack access

entirely. Such disparities may unintentionally widen educational inequalities and influence assessment outcomes. Consequently, researchers increasingly advocate for institutional policies that emphasize responsible AI use rather than outright prohibition.

The reliability of AI-generated content represents another major challenge. Although modern language models produce highly fluent and coherent text, they do not possess genuine understanding or factual reasoning. Instead, they generate responses based on statistical language patterns, which may result in fabricated information, inaccurate explanations, or misleading references. Numerous studies have demonstrated that AI systems occasionally generate non-existent citations, incorrect publication details, and inaccurate factual claims, a phenomenon commonly referred to as "AI hallucination" (Kasneji et al., 2023).

For writing instruction, this limitation has important implications. Students may unknowingly incorporate inaccurate information into essays if they accept AI-generated responses without critical evaluation. Such practices may negatively affect academic quality while simultaneously reducing opportunities for independent source evaluation. Therefore, educators increasingly emphasize that AI-generated content should function as a starting point for learning rather than a final academic product.

Recent educational policy reports also highlight the importance of developing ethical AI literacy among students. Rather than simply discouraging AI use, institutions are encouraged to educate learners about responsible prompting, source verification, citation practices, and critical evaluation of AI-generated outputs. This approach aligns with emerging perspectives that regard AI as a collaborative educational tool requiring informed human oversight rather than unrestricted automation (UNESCO, 2023).

Overall, the literature suggests that maintaining academic integrity in the age of Generative AI requires a balanced approach that combines technological innovation with ethical responsibility. Clear institutional guidelines, transparent disclosure practices, and continuous student education are essential for ensuring that AI supports rather than compromises writing instruction.

5.2 Overdependence on AI and the Decline of Critical Thinking

Although Generative AI offers considerable support throughout the writing process, increasing evidence suggests that excessive reliance on AI technologies may negatively influence learners' cognitive development. One of the principal objectives of writing instruction is to cultivate higher-order thinking skills, including analysis, synthesis, argumentation, evaluation, and reflection. These cognitive processes enable learners to organize ideas, construct logical arguments, and communicate effectively. However, when AI performs substantial portions of these intellectual tasks, students may engage less actively in the learning process.

Researchers argue that overdependence on AI can reduce learners' willingness to generate original ideas independently. Instead of brainstorming, planning, drafting, and revising through personal effort, students may increasingly rely on AI-generated suggestions throughout every stage of writing. Such dependence risks transforming writing from an active learning activity into a passive editing process, thereby limiting opportunities for cognitive growth (Godwin-Jones, 2024).

Critical thinking represents another area of concern. Effective writing requires learners to evaluate evidence, compare perspectives, justify arguments, and construct coherent conclusions. However, AI-generated responses often present information in a fluent and persuasive manner, encouraging students to accept generated content without questioning its validity. Several recent studies have warned that frequent reliance on AI-generated answers may weaken learners' analytical reasoning and independent judgment because students become accustomed to accepting AI responses rather than critically evaluating them (Lo, 2023).

The decline of creativity has also attracted increasing scholarly attention. Creative writing involves imagination, originality, and individual voice. Although Generative AI can produce grammatically sophisticated text, it often relies on patterns derived from previously existing data. Consequently, excessive AI dependence may encourage standardized writing styles while limiting opportunities for learners to develop authentic voices and creative expression. Researchers therefore recommend that AI should supplement rather than replace students' creative thinking during writing instruction.

Another concern relates to learner motivation. Educational psychology suggests that students develop confidence through successfully completing challenging learning tasks. When AI performs complex writing activities on behalf of learners, students may experience short-term improvements in assignment completion but reduced long-term confidence in their own writing abilities. Such dependence may discourage learners from developing resilience when encountering writing difficulties, ultimately affecting lifelong learning skills.

The teacher's role also changes considerably in AI-supported classrooms. Rather than evaluating only the final written product, educators increasingly need to assess learners' writing processes, prompting strategies, revision histories, and critical engagement with AI-generated content. This shift requires assessment methods that value thinking processes, reflection, and originality instead of simply evaluating polished final texts.

Several scholars therefore recommend redesigning writing instruction to promote human-AI collaboration instead of AI substitution. Process-oriented writing activities, reflective journals, oral defenses, peer review, and classroom writing tasks can encourage learners to demonstrate independent thinking while using AI responsibly. Such approaches preserve the educational value of writing by ensuring that students remain active participants throughout the writing process.

From the perspective of the TPACK framework adopted in this review, teachers must carefully balance technological knowledge with pedagogical objectives. Although Generative AI provides valuable technological support, effective writing instruction continues to depend on instructional strategies that promote critical inquiry, creativity, and reflective thinking. Technology should therefore enhance—not replace—the intellectual processes that writing education seeks to develop.

In summary, while Generative AI offers considerable efficiency and convenience, excessive dependence on AI may weaken critical thinking, creativity, learner autonomy, and authentic writing development. The literature consistently suggests that educators should encourage responsible AI use by positioning these technologies as learning partners rather than substitutes for human thinking. Maintaining this balance will be essential for ensuring that writing instruction continues to foster meaningful cognitive development alongside technological innovation.

5.3 Teacher Readiness, AI Literacy, and Pedagogical Integration

The successful implementation of Generative Artificial Intelligence (GenAI) in writing instruction depends not only on the capabilities of AI technologies but also on teachers' readiness to integrate these tools effectively into educational practice. Although AI applications have demonstrated considerable potential for supporting writing instruction, recent studies consistently indicate that many educators remain insufficiently prepared to employ these technologies in pedagogically meaningful ways. Teacher readiness extends beyond technological competence and encompasses pedagogical knowledge, ethical awareness, assessment literacy, and the ability to design learning experiences that encourage responsible AI use.

One of the primary barriers to effective AI integration is the limited level of AI literacy among educators. AI literacy refers to teachers' ability to understand the capabilities, limitations, ethical implications, and educational applications of AI systems. Many language teachers have received little or no formal professional development related to Generative AI, resulting in uncertainty regarding appropriate classroom implementation. Consequently, educators often rely on experimentation or personal experience rather than evidence-based pedagogical practices when introducing AI into writing instruction (Trust et al., 2024).

Another challenge concerns the integration of AI within existing pedagogical frameworks. Although Generative AI can provide grammar correction, idea generation, and writing feedback, these functions alone do not guarantee meaningful learning outcomes. Effective writing instruction requires teachers to align AI technologies with learning objectives, instructional strategies, and assessment practices. From the perspective of the TPACK framework, teachers must integrate technological knowledge with pedagogical and content knowledge to ensure that AI supports rather than replaces effective teaching practices. Recent studies suggest that successful AI integration requires educators to redesign classroom activities that promote collaboration, reflection, and critical engagement with AI-generated content (Farrokhnia et al., 2024).

Teacher attitudes toward AI also influence classroom implementation. While some educators perceive Generative AI as an innovative instructional resource capable of improving learner engagement and writing performance, others express concerns regarding academic integrity, declining student motivation, and reduced writing authenticity. Such differences in perception often influence the extent to which AI technologies are incorporated into classroom practice. Researchers therefore recommend continuous professional development programs that address both the technical and pedagogical dimensions of AI integration while fostering positive yet critical attitudes toward emerging technologies (Chan, 2024).

Assessment practices present another significant challenge. Traditional writing assessment has largely focused on evaluating the final written product. However, the availability of Generative AI requires educators to reconsider assessment approaches by emphasizing writing processes, reflective thinking, collaborative learning, and authentic performance tasks. Several scholars argue that assessment should

increasingly evaluate students' ability to use AI responsibly, critically assess AI-generated content, and demonstrate independent reasoning rather than merely producing polished written texts (Holmes et al., 2024).

Professional development has therefore become a central priority within AI-enhanced education. Institutions are encouraged to provide teachers with structured training on prompt engineering, ethical AI use, AI-assisted assessment, digital literacy, and curriculum redesign. Such initiatives can enhance educators' confidence while promoting more effective classroom implementation. Without adequate institutional support, however, many teachers may struggle to exploit the educational potential of Generative AI, resulting in inconsistent instructional practices and unequal learning opportunities.

Overall, the literature emphasizes that teacher readiness represents one of the most influential factors determining the success of AI integration in writing instruction. Investment in AI literacy, pedagogical training, and evidence-based instructional design will be essential for ensuring that Generative AI contributes positively to English language writing education.

5.4 Privacy, Copyright, Equity, and Implementation Challenges

Beyond pedagogical concerns, the integration of Generative AI into writing instruction introduces several legal, ethical, and institutional challenges related to privacy, copyright, equity, and educational implementation. These issues have become increasingly prominent as AI-powered writing tools continue to expand across schools, colleges, and universities worldwide. Addressing these concerns is essential for ensuring responsible, transparent, and sustainable AI adoption within English Language Teaching.

Data privacy represents one of the most frequently discussed challenges. Many AI-powered writing platforms require users to submit prompts, essays, and personal information to cloud-based systems for processing. Consequently, concerns have emerged regarding the collection, storage, and use of student data. Educational institutions must ensure that AI applications comply with national and international data protection regulations while safeguarding learners' personal information. Researchers have argued that students should be informed about how their data are processed and provided with opportunities to make informed decisions regarding AI use (Zawacki-Richter et al., 2024).

Copyright and intellectual property issues present another complex challenge. The rapid generation of written content by AI systems has raised important questions regarding authorship, ownership, and originality. In academic contexts, uncertainty remains concerning the ownership of AI-generated texts and the extent to which such content can be regarded as original scholarly work. Additionally, concerns have been raised regarding the datasets used to train AI models, particularly when copyrighted materials have been incorporated without explicit permission. These issues highlight the need for clearer institutional policies concerning AI-assisted writing, attribution, and intellectual property rights (Crompton & Burke, 2024).

Educational equity is another significant concern. Although Generative AI offers considerable educational opportunities, access to advanced AI tools remains uneven across institutions and student populations. Premium AI applications often require subscription fees, placing economically disadvantaged learners at a potential disadvantage. Furthermore, disparities in internet connectivity, digital infrastructure, and technological resources may limit equitable access to AI-supported writing instruction, particularly in developing educational contexts. Researchers emphasize that responsible AI implementation should prioritize equitable access and avoid reinforcing existing educational inequalities (Miao & Holmes, 2025).

Implementation challenges also arise at the institutional level. Many educational organizations have introduced AI technologies more rapidly than corresponding governance structures. As a result, policies regarding acceptable AI use, assessment procedures, ethical standards, and teacher responsibilities often remain inconsistent or underdeveloped. Institutions therefore require comprehensive governance frameworks that establish clear expectations regarding AI use while supporting educators and students in navigating rapidly evolving technological environments (UNESCO, 2023).

Another important implementation issue concerns the continuous evolution of AI technologies. The rapid pace of technological development creates difficulties for curriculum designers and policymakers attempting to establish long-term educational guidelines. AI models are updated frequently, introducing new functionalities that may alter classroom practices within relatively short periods. Consequently, educational institutions require flexible policies capable of adapting to ongoing technological advancements while maintaining academic standards and educational quality.

The literature increasingly suggests that addressing these challenges requires collaborative efforts among educators, researchers, policymakers, software developers, and educational institutions. Rather than viewing privacy, copyright, and equity concerns as barriers to AI adoption, these issues should be

considered opportunities for developing more ethical, transparent, and inclusive educational ecosystems. Responsible governance frameworks, combined with continuous policy evaluation and stakeholder collaboration, will be essential for ensuring that Generative AI contributes positively to writing instruction while protecting learners' rights and maintaining educational integrity.

6. Conclusion

Generative Artificial Intelligence (GenAI) has emerged as a transformative technology with significant implications for writing instruction in English Language Teaching (ELT). This review examined the applications, opportunities, and challenges associated with the integration of Generative AI in writing pedagogy through the lens of the Technological Pedagogical Content Knowledge (TPACK) framework. The reviewed literature indicates that AI-powered writing tools have the potential to support multiple stages of the writing process, including idea generation, language development, grammar correction, formative feedback, revision, and academic writing assistance (Kohnke et al., 2023; Mahapatra, 2024). These capabilities contribute to personalized learning, increased learner autonomy, improved writing quality, and more interactive learning experiences (Farrokhnia et al., 2024).

Despite these educational benefits, the review also highlights several critical challenges that must be addressed before Generative AI can be effectively integrated into writing instruction. Concerns regarding academic integrity, ethical use, overdependence on AI, declining critical thinking, teacher preparedness, data privacy, copyright, and equitable access continue to influence the successful implementation of AI in educational settings (Cotton et al., 2023; Perkins, 2023; UNESCO, 2023). These findings demonstrate that the effectiveness of Generative AI depends not only on technological advancement but also on responsible pedagogical integration, institutional support, and comprehensive educational policies.

The TPACK framework provides an appropriate theoretical foundation for understanding how teachers can integrate Generative AI into writing instruction while maintaining a balance between technological knowledge, pedagogical practices, and content expertise. Rather than replacing teachers, AI should function as a complementary instructional resource that enhances learning while preserving the essential role of educators in facilitating critical thinking, creativity, collaboration, and reflective learning (Farrokhnia et al., 2024; Trust et al., 2024). Likewise, students should be encouraged to use AI as a learning partner that supports idea development and revision rather than as a substitute for independent writing and intellectual engagement.

Based on the reviewed literature, educational institutions should prioritize AI literacy among teachers and students through structured professional development, curriculum redesign, and responsible assessment practices. Institutions should also establish comprehensive governance frameworks that address ethical considerations, transparency, privacy, and academic integrity while supporting the pedagogically meaningful integration of AI technologies into writing instruction (Chan, 2024; Miao et al., 2024).

Although research on Generative AI in ELT has expanded rapidly, important research gaps remain. Future investigations should examine the long-term impact of AI-assisted writing instruction, compare emerging Generative AI platforms, explore AI integration across diverse educational contexts, and evaluate pedagogical implementation using theoretical frameworks such as TPACK. Longitudinal and cross-cultural studies will provide deeper insights into how AI can enhance writing development while preserving learner autonomy and educational quality (Godwin-Jones, 2024; Zawacki-Richter et al., 2024).

In conclusion, Generative Artificial Intelligence should not be regarded as a replacement for teachers or learners but as an intelligent educational partner capable of enriching writing instruction when implemented responsibly. The future of AI in English Language Teaching will depend on achieving an appropriate balance between technological innovation, pedagogical effectiveness, ethical responsibility, and human creativity. By adopting evidence-based instructional practices, strengthening AI literacy, and developing robust institutional policies, educators can harness the transformative potential of Generative AI while ensuring that writing instruction continues to foster originality, critical thinking, and meaningful language learning.

References

1. Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2023). Chatting and cheating? Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*, 61(2), 228–239. <https://doi.org/10.1080/14703297.2023.2190148>
2. Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeiffer, F., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., ... Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274. <https://doi.org/10.1016/j.lindif.2023.102274>
3. Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for language teaching and learning. *RELC Journal*, 54(2), 537–550. <https://doi.org/10.1177/00336882231162868>
4. Lo, C. K. (2023). What is the impact of ChatGPT on education? A rapid review of the literature. *Education Sciences*, 13(4), 410. <https://doi.org/10.3390/educsci13040410>
5. Perkins, M. (2023). Academic integrity considerations of AI large language models in the post-pandemic era: ChatGPT and beyond. *Journal of University Teaching & Learning Practice*, 20(2), 1–12. <https://doi.org/10.53761/1.20.02.07>
6. Tlili, A., Shehata, B., Adarkwah, M. A., Bozkurt, A., Hickey, D. T., Huang, R., & Agyemang, B. (2023). What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education. *Smart Learning Environments*, 10(1), 15. <https://doi.org/10.1186/s40561-023-00237-x>
7. Yan, D. (2023). Impact of ChatGPT on learners in a L2 writing practice: A case study. *Education and Information Technologies*, 29, 1–23. <https://doi.org/10.1007/s10639-023-11797-0>
8. Koehler, M. J., Mishra, P., & Cain, W. (2013). What is technological pedagogical content knowledge (TPACK)? *Journal of Education*, 193(3), 13–19. <https://doi.org/10.1177/002205741319300303>
9. Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017–1054. <https://doi.org/10.1111/j.1467-9620.2006.00684.x>
10. Kasneci, E., et al. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274. <https://doi.org/10.1016/j.lindif.2023.102274>
11. Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for language teaching and learning. *RELC Journal*, 54(2), 537–550. <https://doi.org/10.1177/00336882231162868>
12. Lo, C. K. (2023). What is the impact of ChatGPT on education? A rapid review of the literature. *Education Sciences*, 13(4), 410. <https://doi.org/10.3390/educsci13040410>
13. Han, T., Cong, Y., & Zou, M. (2023). Exploring the impact of ChatGPT on EFL students' writing performance and learning experiences. *Education and Information Technologies*, 29, 1–25. <https://doi.org/10.3389/fcomp.2023.1141649>
14. Ibrahim, A. M. (2024). Artificial intelligence and personalized learning in EFL writing instruction: Opportunities and challenges. *International Review of Research in Open and Distributed Learning*, 25(2), 45–63. <https://doi.org/10.1080/15332861.2023.2234122>
15. Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeiffer, F., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., & Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274. <https://doi.org/10.1016/j.lindif.2023.102274>
16. Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for language teaching and learning. *RELC Journal*, 54(2), 537–550. <https://doi.org/10.1177/00336882231162868>

17. Lee, J. Y., Kim, H., & Park, S. (2025). Generative artificial intelligence in EFL writing instruction: Emerging practices and pedagogical implications. *Computers and Education: Artificial Intelligence*, 7, 100315. <https://doi.org/10.30935/ojcmnt/17545>
18. Mahapatra, B. (2024). Exploring the effectiveness of ChatGPT in enhancing EFL learners' writing skills. *Smart Learning Environments*, 11(1), 27. <https://doi.org/10.1186/s40561-024-00295-9>
19. Perkins, M. (2023). Academic integrity considerations of AI large language models in the post-pandemic era: ChatGPT and beyond. *Journal of University Teaching and Learning Practice*, 20(2), 1–24. <https://search.informit.org/doi/10.3316/informit.T2024111300009591751711095>
20. Tlili, A., Shehata, B., Adarkwah, M. A., Bozkurt, A., Hickey, D. T., Huang, R., & Agyemang, B. (2023). What if the devil is my guardian angel? ChatGPT as a case study of using chatbots in education. *Smart Learning Environments*, 10(1), 15. <https://doi.org/10.1186/s40561-023-00237-x>
21. Webb, R. (2025). Generative AI in English language teaching. *TESL-EJ*, 29(1), 1–18. <https://doi.org/10.55593/ej.29115int3>
22. Woo, M., Lee, S., & Kim, J. (2025). Collaborative writing with generative AI: Impacts on learner engagement and writing development. *Language Learning & Technology*, 29(1), 56–78. <https://doi.org/10.15702/mall.2025.28.4.25>
23. Xiao, Y. (2025). Generative AI-assisted brainstorming and idea generation in EFL writing classrooms. *Journal of Educational Technology Development and Exchange*, 18(1), 34–52. <https://doi.org/10.4337/9781035338764.00044>
24. Yan, D. (2023). Impact of ChatGPT on learners in a L2 writing practice: A case study. *Education and Information Technologies*, 29, 1–23. <https://doi.org/10.1007/s10639-023-11797-0>
25. Zamorano, C. (2025). Enhancing academic writing in English language education through generative AI integration. *Research Studies in English Language Teaching and Learning*, 3(3), 424-447.
26. Zhang, Y. (2025). AI-generated feedback and revision practices in EFL writing instruction. *Computers and Composition*, 75, 102–118. <https://dx.doi.org/10.2139/ssrn.5197066>
27. Alpar, Ö. (2025). Evaluating generative AI tools for improving English writing skills: A preliminary comparison of ChatGPT-4, Google Gemini, and Microsoft Copilot. *European Journal of Educational Research*, 14(4), 1291–1308. <https://doi.org/10.12973/eu-jer.14.4.1291>
28. Chen, Y. (2025). Generative AI in EFL writing instruction for lower proficiency learners: Effects on writing performance and affective responses. *Language Learning & Technology*. Advance online publication.
29. Ibrahim, K. (2024). Potentials and implications of ChatGPT for ESL writing instruction: A meta-analysis. *International Review of Research in Open and Distributed Learning*, 25(3). <https://www.irrodl.org/index.php/irrodl/article/view/7820>
30. Lee, Y. J. (2025). Integrating generative AI into EFL writing: University students' strategies and perceptions. *Online Journal of Communication and Media Technologies*, 15(2). <https://www.ojcmnt.net/article/integrating-generative-ai-into-efl-writing-university-students-strategies-and-perceptions-17545>
31. Mekheimer, M. A. A. (2025). Generative AI-assisted feedback and EFL writing: A study on writing proficiency, revision practices, and writing quality. *Discover Education*. <https://doi.org/10.1007/s44217-025-00602-7>
32. Sanz-Tejeda, A., Domínguez-Oller, J. C., Baldaquí-Escandell, J. M., Gómez-Díaz, R., & García-Rodríguez, A. (2026). The impact of generative AI on academic reading and writing: A synthesis of recent evidence (2023–2025). *Frontiers in Education*, 10, 1711718. <https://doi.org/10.3389/educ.2025.1711718>
33. Xiao, F. (2025). Exploring the landscape of generative AI (ChatGPT)-assisted EFL writing: Opportunities, challenges, and implications. *ECNU Review of Education*. Advance online publication.

34. Zhang, Y. (2025). Designing ChatGPT-mediated feedback activities in EFL writing classrooms. *Assessment & Evaluation in Higher Education*. Advance online publication. <https://doi.org/10.1080/02602938.2025.2571846>
35. Bearman, M., & Ajjawi, R. (2023). Learning to work with the black box: Pedagogy for a world with artificial intelligence. *British Journal of Educational Technology*, 54(5), 1160–1173.
36. Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2023). Chatting and cheating? Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*, 61(2), 228–239. <https://doi.org/10.1080/14703297.2023.2190148>
37. Godwin-Jones, R. (2024). Distributed agency in second language learning and teaching through generative AI. *Language Learning & Technology*, 28(2), 1–12.
38. Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeiffer, F., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., & Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274. <https://doi.org/10.1016/j.lindif.2023.102274>
39. Lo, C. K. (2023). What is the impact of ChatGPT on education? A rapid review of the literature. *Education Sciences*, 13(4), 410. <https://doi.org/10.3390/educsci13040410>
40. Perkins, M. (2023). Academic integrity considerations of AI large language models in the post-pandemic era: ChatGPT and beyond. *Journal of University Teaching & Learning Practice*, 20(2).
41. UNESCO. (2023). *Guidance for generative AI in education and research*. UNESCO Publishing. <https://unesdoc.unesco.org>
42. Chan, C. K. Y. (2024). A comprehensive AI policy education framework for university teaching and learning. *International Journal of Educational Technology in Higher Education*, 21(1), 1–24. <https://doi.org/10.1186/s41239-024-00470-3>
43. Crompton, H., & Burke, D. (2024). Artificial intelligence in higher education: The state of the field. *International Journal of Educational Technology in Higher Education*, 21(1), 1–23.
44. Farrokhnia, M., Banihashem, S. K., Noroozi, O., & Wals, A. (2024). A SWOT analysis of ChatGPT in education: Implications for educational practice and research. *Innovations in Education and Teaching International*, 61(3), 460–474. <https://doi.org/10.1080/14703297.2023.2195846>
45. Holmes, W., Miao, F., & Shadiev, R. (2024). *Guidance for generative AI in education and research: Implications for teaching, learning, and assessment*. UNESCO.
46. Miao, F., & Holmes, W. (2025). Artificial intelligence and the future of education: Policy perspectives for responsible implementation. UNESCO Publishing.
47. Trust, T., Carpenter, J. P., Krutka, D. G., & Kimmons, R. (2024). Educators' perspectives on generative artificial intelligence and professional learning. *Journal of Digital Learning in Teacher Education*, 40(2), 73–90.
48. UNESCO. (2023). *Guidance for generative AI in education and research*. UNESCO Publishing. <https://unesdoc.unesco.org>
49. Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2024). Systematic review of artificial intelligence applications in higher education: Implications for teaching, learning, governance, and ethics. *International Journal of Educational Technology in Higher Education*, 21(1), 1–31.
50. Chan, C. K. Y. (2024). A comprehensive AI policy education framework for university teaching and learning. *International Journal of Educational Technology in Higher Education*, 21(1), 1–24. <https://doi.org/10.1186/s41239-024-00470-3>

51. Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2023). Chatting and cheating? Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*, 61(2), 228–239. <https://doi.org/10.1080/14703297.2023.2190148>
52. Farrokhnia, M., Banihashem, S. K., Noroozi, O., & Wals, A. (2024). A SWOT analysis of ChatGPT in education: Implications for educational practice and research. *Innovations in Education and Teaching International*, 61(3), 460–474. <https://doi.org/10.1080/14703297.2023.2195846>
53. Godwin-Jones, R. (2024). Distributed agency in second language learning and teaching through generative AI. *Language Learning & Technology*, 28(2), 1–12.
54. Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for language teaching and learning. *RELC Journal*, 54(2), 537–550. <https://doi.org/10.1177/00336882231162868>
55. Mahapatra, S. (2024). Impact of ChatGPT on ESL students' academic writing skills: A mixed methods intervention study. *Smart Learning Environments*, 11, Article 9. <https://doi.org/10.1186/s40561-024-00295-9>
56. Miao, F., Holmes, W., Huang, R., & Zhang, H. (2024). *AI competency framework for teachers*. UNESCO.
57. Perkins, M. (2023). Academic integrity considerations of AI large language models in the post-pandemic era: ChatGPT and beyond. *Journal of University Teaching & Learning Practice*, 20(2), 1–12.
58. Trust, T., Carpenter, J. P., Krutka, D. G., & Kimmons, R. (2024). Educators' perspectives on generative artificial intelligence and professional learning. *Journal of Digital Learning in Teacher Education*, 40(2), 73–90.
59. UNESCO. (2023). *Guidance for generative AI in education and research*. UNESCO Publishing. <https://unesdoc.unesco.org>
60. Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2024). Systematic review of artificial intelligence applications in higher education: Implications for teaching, learning, governance, and ethics. *International Journal of Educational Technology in Higher Education*, 21(1), 1–31.