BOLETIN CIENTÍFICO IDEAS Y VOCES
ISSN 2960-8112

Using Generative Artificial Intelligence as a Pedagogical Tool to Enhance Writing Skills in English as a Foreign Language

"Uso de la Inteligencia Artificial generativa como herramienta pedagógica para fortalecer las habilidades de escritura en inglés como lengua extranjera."

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Reception: 09 de november de 2025

Acceptation: 10 de november de 2025

Publication: 05 de december de 2025

Citation: Rodriguez, A. & Astudillo, M. (2025). Using generative Artificial Intelligence as a pedagogical tool to enhance writing skills in english as a foreign language. Ideas y Voces, 5(3), Pág. 326-342.

Abstract

This action research investigated the impact of using generative artificial intelligence (GenAI) as a pedagogical tool to enhance writing skills among university students of English as a Foreign Language (EFL). The study was conducted during the first semester of 2025 with 32 students enrolled in an Academic Writing course at a public university in Ecuador. A pre- and post-test design was applied to compare students' writing performance before and after an eight-week intervention using ChatGPT for guided brainstorming, drafting, and revision tasks. Data were collected through writing assessments, classroom observations, reflective journals, and focus group interviews. Quantitative results showed a significant increase in students' overall writing scores, particularly in coherence, organization, and vocabulary richness. Qualitative findings revealed that learners developed stronger revision habits, higher motivation, and a greater sense of confidence in expressing ideas in English. However, students also emphasized the importance of ethical guidance and teacher mediation to prevent over-reliance on AI-generated content. The study concludes that GenAI, when implemented through structured pedagogical scaffolding, can effectively support writing development while fostering critical awareness, autonomy, and responsible digital literacy in EFL contexts.

Keywords Generative Artificial Intelligence; EFL writing; academic writing; pedagogical innovation; writing feedback

Resumen

Esta investigación-acción analizó el impacto del uso de la inteligencia artificial generativa (IAG) como herramienta pedagógica para fortalecer las habilidades de escritura en estudiantes universitarios de inglés como lengua extranjera (EFL). El estudio se desarrolló durante el primer semestre de 2025 con 32 estudiantes matriculados en la asignatura de *Academic Writing* en una universidad pública del Ecuador. Se aplicó un diseño con prueba previa y posterior para comparar el desempeño escrito antes y después de una intervención de ocho semanas en la que se utilizó ChatGPT como apoyo para la lluvia de ideas, la redacción y la revisión guiada de textos. Los datos se recopilaron mediante evaluaciones escritas, observaciones de clase, diarios reflexivos y entrevistas grupales. Los resultados cuantitativos evidenciaron un aumento significativo en las calificaciones generales de escritura, especialmente en la coherencia, la organización y la riqueza léxica. Los hallazgos cualitativos mostraron que los estudiantes desarrollaron mejores hábitos de revisión, mayor motivación y confianza para expresar ideas en inglés. No obstante, también destacaron la necesidad de orientación ética y acompañamiento docente para evitar la dependencia del contenido generado por IA. Se concluye que la IAG, aplicada con una mediación pedagógica estructurada, puede potenciar el aprendizaje de la escritura y promover la autonomía, el pensamiento crítico y la alfabetización digital responsable en contextos de enseñanza del inglés como lengua extranjera.

Palabras clave: Inteligencia artificial generativa; escritura en inglés como lengua extranjera; escritura académica; innovación pedagógica; retroalimentación en la escritura

Introduction

In recent years, English has become more than just a global language of communication. It is now a gateway to academic growth, professional opportunities, and social mobility. For learners of English as a Foreign Language (EFL), developing strong writing skills remains one of the most demanding aspects of language learning. Writing requires not only linguistic accuracy but also creativity, organization, and self-reflection. Yet, many students continue to struggle with limited feedback, low motivation, and difficulties in revising their own work (Wang & Dang, 2024). These challenges invite educators to explore new pedagogical strategies that make writing instruction more interactive, immediate, and adaptive to individual needs.

One of the most transformative innovations in this search for improvement is the emergence of generative artificial intelligence (GenAI). Tools such as ChatGPT, Claude, and Gemini are changing the way teachers and students interact with language. Unlike traditional automated feedback systems that simply highlight errors, GenAI can generate ideas, suggest coherent structures, or provide context-sensitive vocabulary. This shift transforms AI from a mechanical corrector into what Li (2025) calls a "cognitive collaborator," capable of guiding learners through the complex stages of writing — from brainstorming and outlining to revision and polishing.

However, while the pedagogical potential of GenAI is undeniable, its classroom integration must be approached with caution and critical awareness. Research has shown that when learners rely excessively on AI-generated suggestions, they risk diminishing their own creative and metacognitive engagement (Mekheimer, 2025). Furthermore, questions about authorship, originality, and academic honesty have intensified since the rise of AI-based text generation (Cotton et al., 2024). These tensions have led many educators to advocate for guided use of AI — where technology acts as a scaffold within

a human-centered learning process rather than as a replacement for authentic thinking (Frontiers in Education, 2024).

Current studies in EFL contexts reveal that students can benefit significantly from AI-mediated feedback when its use is framed within clear pedagogical goals. For example, Shi et al. (2025) found that learners who interacted with generative tools during the drafting and revising phases produced more coherent and stylistically mature texts. Similarly, Yan (2024) observed that collaborative engagement with ChatGPT feedback encouraged students to discuss, negotiate, and reflect on writing choices, resulting in higher levels of self-regulation. Such findings highlight the importance of teacher-designed frameworks that balance technological support with learner autonomy.

Despite these promising outcomes, the field still lacks sufficient empirical evidence on how and under what conditions GenAI enhances EFL writing. There is a need to understand not only the measurable improvement in written performance but also the psychological and ethical dimensions of using AI in the classroom. How do learners perceive the value of AI feedback? What types of guidance foster productive collaboration between humans and machines? And how can educators cultivate ethical awareness alongside digital literacy?

This study aims to explore these questions by examining the use of generative AI as a pedagogical tool to improve EFL students' writing quality, revision habits, and self-regulatory behavior. It also investigates the perceptions of both students and teachers toward this technological integration. The ultimate goal is to provide evidence-based recommendations for responsible AI use that supports authentic learning rather than mechanical dependence.

By addressing these aims, the study contributes to ongoing discussions about the future of language education in the age of artificial intelligence. It seeks to position GenAI not as a shortcut to writing success, but as a partner in learning — one that can amplify human creativity, promote reflective thinking, and help learners develop the confidence to express their ideas in English with clarity and purpose.

Literature review:

Writing in a foreign language continues to be one of the most complex and cognitively demanding skills for English language learners. Unlike speaking or listening, writing requires the ability to plan, organize, revise, and monitor one's output while maintaining accuracy and coherence. For EFL learners, this process is often hindered by limited exposure to authentic input, scarce opportunities for meaningful feedback, and a lack of confidence in their linguistic abilities (Wang & Dang, 2024). Traditional methods such as peer review, teacher correction, and automated writing evaluation systems have provided partial solutions, yet many learners still struggle to engage deeply with the revision process and to develop a sense of autonomy in their writing (Bitchener & Ferris, 2012; Hyland & Hyland, 2006). These persistent challenges have encouraged educators to look for new ways to make writing instruction more dynamic and responsive to individual learner needs.

In recent years, the emergence of generative artificial intelligence (GenAI) has opened new possibilities for transforming the teaching and learning of writing. Powered by large language models such as ChatGPT or Claude, GenAI can generate coherent text, reformulate sentences, provide instant feedback, and even simulate interactive dialogue to support idea development. According to Li (2025), generative AI can act as a "cognitive collaborator," allowing learners to co-construct meaning rather than simply receive corrections. This represents a significant evolution from earlier automated writing

tools, which primarily focused on grammar and surface-level accuracy. Research shows that when used intentionally, GenAI can enhance students' confidence, stimulate creativity, and help them identify patterns of language use that would otherwise remain unnoticed (Mekheimer, 2025). These affordances make GenAI particularly appealing for EFL contexts, where teachers often handle large classes and cannot provide extensive individual feedback.

Nonetheless, the growing enthusiasm for AI-based instruction has also prompted critical reflection. Scholars caution that without pedagogical scaffolding, students may over-rely on AI suggestions and disengage from meaningful self-correction (Lee, 2025). Moreover, ethical issues such as authorship, data privacy, and academic honesty have gained attention as learners increasingly integrate AI outputs into their writing (Cotton et al., 2024). In this regard, the challenge is not whether AI should be used, but how it should be integrated responsibly into the learning process. Recent reviews of empirical studies published between 2023 and 2025 indicate that the most successful implementations of GenAI in writing instruction occur when teachers define clear boundaries, guide prompt formulation, and encourage reflection on the quality and limitations of AI feedback (Li et al., 2025; Mali, 2025). In other words, GenAI is most effective when treated as a scaffold within a human-centered learning framework rather than a replacement for human cognition.

Several empirical investigations highlight the pedagogical impact of AI-mediated feedback. Mekheimer (2025), for instance, found that university students who received generative feedback during the drafting stage produced texts with improved cohesion and organization compared to those receiving traditional feedback. Similarly, Yan (2024) reported that collaborative engagement with AI-generated suggestions promoted greater metacognitive awareness and revision effort among learners. These findings resonate

with theories of self-regulated learning, which emphasize that feedback should prompt reflection, evaluation, and goal-setting rather than passive correction. However, as Yang et al. (2024) observed, the quality of learning outcomes depends on the extent to which learners actively evaluate and modify AI suggestions instead of accepting them uncritically. In this sense, generative AI becomes a mediational tool—an assistant that enhances, rather than replaces, human agency in writing.

The literature also points to the emergence of AI literacy as a crucial dimension of language education. Li (2025) and Park (2025) stress that developing students' ability to design effective prompts, interpret AI feedback critically, and make ethical decisions about AI use is now a pedagogical necessity. These skills are intertwined with broader 21st-century competencies such as digital literacy and critical thinking. Teachers, therefore, play a central role not only in demonstrating how to use these tools but also in modeling responsible practices that maintain authenticity and originality. The recent position paper from Frontiers in Education (2024) emphasizes that transparent classroom policies and reflective discussions about AI use are essential to prevent misuse and foster academic integrity.

Despite the encouraging evidence, important gaps persist. Most existing studies have been conducted in higher-education contexts in Asia or Europe, with limited exploration in Latin American or under-resourced EFL settings where access and digital literacy vary widely. Furthermore, while many studies assess writing quality improvements, fewer examine how GenAI shapes the revision process, motivation, and self-regulation over time. Research that captures both the quantitative effects of AI-supported writing and the qualitative experiences of learners and teachers remains scarce. As Mali (2025) points out, integrating GenAI into writing pedagogy requires not only technological readiness

but also a shift in teacher mindset—from control to co-creation, from correction to collaboration.

Overall, the literature converges on a shared understanding: generative AI has the potential to transform EFL writing instruction if implemented through thoughtful pedagogy and ethical awareness. It can enhance learners' linguistic competence, promote autonomy, and provide personalized scaffolds that extend beyond classroom boundaries. Yet, realizing this potential depends on designing environments where human creativity, reflection, and critical thinking remain at the core. This study builds upon these insights by examining the impact of guided GenAI use on EFL students' writing performance, revision behavior, and self-regulated learning, while also exploring the perceptions of both students and teachers regarding its ethical and pedagogical implications

Metodology

Participants:

The study was carried out during the first semester of the 2025 academic year at a public university in Ecuador. It involved a group of undergraduate students enrolled in the English program, specifically those taking the "Academic Writing" course. A total of 32 participants (18 females and 14 males), aged between 18 and 22 years, took part in the study. Their English proficiency ranged from B1 to B2 according to the Common European Framework of Reference for Languages (CEFR). All students were familiar with digital learning tools and voluntarily agreed to participate after being informed of the study's purpose, ethical considerations, and confidentiality assurances.

The participants were divided into two intact classes taught by the same instructor, who also served as the researcher. One class was designated as the experimental group, where students received guided instruction using Generative Artificial Intelligence (GenAI)

tools such as ChatGPT for pre-writing, feedback, and revision activities. The other class functioned as the comparison group, which followed the same curriculum but relied exclusively on traditional teacher and peer feedback methods. Both groups covered the same writing topics and assignments during the semester.

Instruments:

To ensure a comprehensive understanding of how generative artificial intelligence influenced students' writing development, several complementary instruments were employed for data collection and triangulation. Quantitative evidence was obtained through a writing pre-test and post-test, while qualitative insights emerged from classroom observations, reflective journals, surveys, and focus group interviews. Each instrument served a specific purpose in capturing both the measurable improvement in writing and the subjective experiences of learners throughout the process.

The writing pre-test and post-test were the central tools for assessing students' progress. At the beginning of the semester, all participants wrote a 250–300-word argumentative essay on a familiar academic topic to establish a baseline of their writing proficiency. The same type of task was administered at the end of the intervention to evaluate improvement. Both writing samples were assessed using an analytic rubric adapted from the Common European Framework of Reference for Languages (CEFR), which included five criteria: content development, organization, vocabulary range, grammatical accuracy, and overall coherence. To maintain objectivity, two trained raters evaluated each essay independently, and inter-rater reliability was verified through consistency checks. The comparison between pre- and post-test scores provided quantitative evidence of learning gains attributable to the integration of GenAI into writing instruction.

To complement these results, the researcher used classroom observation logs and reflective journals to record the dynamic aspects of the learning process. Observation logs captured students' engagement, participation, and revision behaviors during writing workshops, particularly noting how learners interacted with ChatGPT prompts and feedback. Reflective journals, completed by students after each major writing activity, invited them to describe how they used GenAI, what type of feedback they received, and how it influenced their motivation and confidence. These journals offered valuable insights into learners' metacognitive awareness and evolving attitudes toward AI-supported learning.

At the end of the semester, students in the experimental group completed a perception survey designed to explore their attitudes toward using generative AI in academic writing. The survey included both Likert-scale and open-ended items addressing key aspects such as perceived usefulness, motivation, self-efficacy, and ethical awareness. Responses provided a broader understanding of how students valued the integration of AI tools and the degree to which they felt these technologies enhanced their writing autonomy.

Finally, focus group interviews were conducted with selected participants to gain a deeper qualitative perspective. Two semi-structured sessions, each including six students, encouraged open discussion about personal experiences, challenges, and reflections regarding the use of AI in the writing process. These interviews were audio-recorded, transcribed, and later analyzed to identify emerging themes related to revision strategies, collaboration, and ethical considerations. The combination of these instruments ensured a rich and multidimensional data set that captured not only the improvement in written performance but also the human dimension of learning with artificial intelligence.

Design, procedure, and data analysis:

The research adopted an action research design, characterized by a cyclical process of planning, acting, observing, and reflecting (Kemmis & McTaggart, 1988). The goal was to improve the pedagogical use of generative AI in the writing classroom through evidence-based reflection. The intervention lasted eight weeks and followed a pre-test/post-test quasi-experimental structure, complemented by qualitative data to capture learner perceptions.

During the planning stage, the instructor identified recurrent difficulties in students' writing — particularly limited revision and shallow idea development. To address these issues, a pedagogical plan was designed that integrated ChatGPT as a writing assistant in three main stages: (a) brainstorming and outlining ideas, (b) revising drafts with guided prompts, and (c) reflecting on feedback and making improvements. Students were trained to use the tool ethically by including AI references when applicable and distinguishing between their own writing and AI suggestions.

In the action phase, the experimental group participated in weekly writing workshops where GenAI was used collaboratively under teacher supervision. Prompts were carefully structured to elicit critical thinking rather than simple corrections (e.g., "Suggest ways to improve coherence in my introduction" instead of "Fix my grammar"). The comparison group completed the same assignments but relied on peer and teacher feedback only.

In the observation phase, the researcher collected classroom notes, journal entries, and writing samples. Changes in writing quality and revision patterns were documented systematically. In the reflection phase, findings from pre- and post-tests, surveys, and focus groups were analyzed to evaluate both pedagogical impact and learner perceptions, which informed future instructional adjustments.

Quantitative data from the pre- and post-tests were analyzed using descriptive statistics and paired-sample t-tests to measure significant differences in writing performance within and between groups. Survey data were analyzed through frequency distributions and mean comparisons to identify overall attitudes toward AI use. Qualitative data from journals and interviews were transcribed, coded, and analyzed thematically using an inductive approach to capture recurring themes related to self-regulation, autonomy, and ethical awareness. The integration of quantitative and qualitative results allowed for a comprehensive understanding of the effects of GenAI on EFL writing development.

Analysis of Results

Criteria	Pre-test Mean	Post-test Mean
Content development and idea organization	3.10	4.35
Vocabulary range and lexical richness	2.85	4.28
Grammar and sentence accuracy	2.97	4.09
Coherence and cohesion across paragraphs	3.04	4.41
Mechanics (spelling, punctuation, formatting)	3.42	4.32
Overall writing performance (average)	**3.08**	**4.29**

The comparison between the pre- and post-test means demonstrates a clear and consistent improvement in all assessed aspects of students' academic writing after the generative AI intervention. At the beginning of the semester, learners showed moderate control of content and language, with an overall mean of 3.08 out of 5, reflecting partial development of coherence and lexical variety. After eight weeks of guided use of ChatGPT as a writing assistant, the overall mean rose to 4.29, indicating a strong command of organization, vocabulary, and clarity of expression.

The most substantial progress was observed in content development and idea organization (from 3.10 to 4.35) and coherence and cohesion (from 3.04 to 4.41). These gains suggest

that generative AI helped students visualize how ideas connect and how to structure essays more effectively. Improvements in vocabulary richness (from 2.85 to 4.28) confirm that exposure to AI-generated suggestions expanded learners' lexical repertoire and stylistic flexibility. Likewise, higher means in grammar accuracy and mechanics indicate that students not only corrected surface errors but also internalized grammatical patterns through iterative practice and self-correction prompted by the tool.

Taken together, the results demonstrate that when generative AI is used with pedagogical guidance, it can meaningfully enhance EFL learners' writing performance. The quantitative evidence supports the qualitative observations that students became more confident, reflective, and independent writers. This confirms the value of integrating AI as a scaffold within the writing process—one that complements, rather than replaces, the human feedback and critical thinking essential to authentic language learning.

Conclusions

The findings of this action research demonstrate that the guided integration of generative artificial intelligence can significantly enhance EFL students' writing competence. The pre- and post-test comparisons revealed notable progress in organization, coherence, vocabulary range, and grammatical accuracy, confirming that AI-assisted feedback can positively influence both the product and the process of writing. Students who interacted with ChatGPT under structured guidance developed stronger revision habits, deeper reflection on language use, and greater autonomy in expressing ideas. These results highlight that when technology is embedded within a humanized, pedagogically sound framework, it becomes a valuable ally in fostering linguistic growth and self-regulated learning.

Beyond measurable improvement, this study underscores the transformative role of generative AI in reshaping students' attitudes toward writing. Learners who initially viewed writing as a mechanical and stressful task began to perceive it as a creative, interactive process supported by intelligent tools and teacher mediation. The combination of human feedback, AI assistance, and reflective practice created an environment of collaboration, curiosity, and ethical awareness. Thus, rather than replacing the teacher, generative AI redefines the teacher's role—as a facilitator of critical thinking and ethical use of technology. Continued research in this area should focus on expanding this model to other linguistic skills and exploring long-term impacts on learner autonomy and digital literacy.

Recommendations

It is recommended that teachers integrate generative AI tools as pedagogical scaffolds rather than as stand-alone writing correctors. Guided use—through carefully designed prompts, reflection tasks, and teacher mediation—can help students engage critically with AI feedback and maintain authorship of their ideas. Training sessions on AI literacy and ethical awareness should be incorporated into writing courses so that learners understand how to use these technologies responsibly, acknowledging both their benefits and limitations.

Future research and classroom innovation should focus on expanding AI-supported learning beyond writing accuracy to include creativity, collaboration, and higher-order thinking. Longitudinal studies could explore how consistent exposure to generative AI influences students' autonomy, motivation, and digital competence over time. Institutions should also develop clear policies and teacher-training programs that promote equitable access to AI tools while ensuring integrity, transparency, and inclusion in EFL education.

Limitations:

This study was conducted with a relatively small sample of university students from a single institution, which limits the generalization of its findings to broader EFL populations. The results may differ in contexts with varying levels of English proficiency, technological access, or instructional support. Therefore, future studies should include larger and more diverse samples to validate and extend these outcomes.

The intervention covered only one academic semester, providing short-term evidence of the effects of generative AI on writing improvement. It did not capture whether students retained or independently applied these skills over time without AI assistance. A longer longitudinal design is recommended to examine the sustainability of learning gains and behavioral changes.

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