

The Integration of Artificial Intelligence in English Writing Instruction for Hospitality Students

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Submission Track:

Received: 04-10-2025, Final Revision: 28-12-2025, Available Online: 30-12-2025

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ABSTRACT

English writing proficiency is an essential skill for hospitality students, particularly in the context of the global hospitality industry, which requires professional communication with international tourists. However, many students struggle with grammar, vocabulary selection, and effective sentence structuring. Artificial Intelligence (AI) has emerged as a valuable tool in language learning, offering automated feedback, grammar correction, and stylistic suggestions. This study aims to implement AI technology in English writing instruction and analyze its effectiveness for hospitality students. The Research and Development (R&D) method with the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) was employed to design and evaluate AI-based writing instruction. Writing evaluation included both AI-assisted and non-AI tasks to distinguish the improvement from tool-dependent performance. The findings showed significant improvements in writing performance: grammar scores increased from a mean of 62 to 83 (34% improvement), vocabulary scores from 65 to 85 (31% improvement), and structure and cohesion from 60 to 82 (37% improvement). Although these gains demonstrate the potential of AI to support writing development, analysis of no-AI writing tasks indicated that part of the improvement stemmed from students' increased ability to leverage AI feedback effectively. Overall writing proficiency improved from 64 to 84, representing 31% gain. Findings suggest that AI integration enhances writing skills, fosters interactive and adaptive learning, and aligns with the professional demands of the global hospitality industry.

Keywords: *integration, artificial intelligence, English writing, hospitality students*

INTRODUCTION

Recent studies highlight an increasing phenomenon in which students across vocational and higher education programs experience persistent difficulties in academic and professional writing. This issue is particularly visible among hospitality students, who often enter their programs with uneven English foundations and limited exposure to formal writing genres. The shift toward digital communication, while beneficial in many ways, has also contributed to reduced practice in structured writing, leading to overreliance on informal language patterns, abbreviations, and automated corrections. As a result, many learners struggle to produce coherent, contextually appropriate, and grammatically accurate texts, especially when composing emails, service reports, or complaint responses required in hospitality settings. This phenomenon reflects a broader challenge in language education, where students' writing proficiency does not always match industry expectations, reinforcing the need for innovative instructional approaches such as AI-supported writing tools.

In Indonesia, this phenomenon is increasingly evident in vocational and hospitality education. Rapid growth in tourism and service industries has raised expectations for graduates' communication skills, yet the gap between academic preparation and industry demand remains wide. Employers frequently report that graduates struggle with writing complaint-handling responses, incident reports, and guest correspondence with the required level of professional tone, clarity, and accuracy. These persistent challenges reinforce the urgent need for pedagogical innovation and technology-enhanced approaches, especially AI-driven tools, to support students in developing the writing competencies required in real workplace settings.

Recent theoretical and empirical perspectives also emphasize that writing is a cognitively complex process that requires simultaneous engagement in planning, translating ideas into linguistic forms, structuring discourse, monitoring coherence, and revising. Flower and Hayes' (1981) cognitive process theory explains that effective writing depends on a writer's ability to manage long-term memory knowledge, task environment constraints, and recursive problem-solving cycles. Kellogg (2008) further highlights that writing requires coordination of working memory, executive control, and linguistic accuracy, demands that many vocational students find challenging.

Within the field of English for Specific Purposes (ESP), Hyland (2016) argues that professional writing competence extends beyond grammatical accuracy. Writers must understand genre conventions, rhetorical purposes, audience expectations, and institutional norms. Hospitality students often lack exposure to these genre-specific practices, resulting in writing that may be linguistically correct but rhetorically inappropriate. This gap makes it difficult for students to produce communication that aligns with the tone, formality, and clarity required in the service industry.

The issue becomes even more visible within hospitality education, where writing plays a crucial role in guest communication and service operations. Students are expected to produce a range of professional documents, such as incident reports, guest complaint responses, reservation and confirmation emails, internal communication memos, and promotional writing for hotel services.

Industry feedback frequently indicates that graduates struggle to achieve the expected level of professionalism in written communication. Common issues include overly casual tone, ambiguous sentence construction, lack of coherence, misuse of service terminology, and insufficient awareness of customer-oriented language. These practical challenges demonstrate that writing difficulties are not merely linguistic but are directly connected to job performance and guest satisfaction.

Traditional writing instruction, which often centered on grammar exercises, short paragraphs, and infrequent feedback, has not been sufficient to address these complex needs. Students rarely receive individualized correction, and many become dependent on memorizing templates rather than learning how to construct meaning strategically. Limited feedback cycles further hinder improvement, as students cannot revise and reflect on their errors effectively.

These issues reinforce the urgent need for innovative pedagogical approaches that can address writing challenges comprehensively. Artificial Intelligence-supported writing instruction offers a promising solution by providing instant, personalized, and iterative feedback that is difficult to achieve through conventional classroom methods. When AI tools are implemented through a structured instructional design framework such as the ADDIE model, they create a systematic pathway for diagnosing student needs,

designing targeted interventions, developing guided learning materials, and evaluating progress effectively.

In the contemporary globalized context, the hospitality industry serves as a crucial sector that thrives on cross-cultural communications. For professionals in the hospitality industry, proficiency in English, especially in written form, is essential for composing professional emails, reports, marketing materials, and guest correspondence. According to Richards & Schmidt (2019), writing in English for specific purposes, such as tourism and hospitality, requires accuracy, clarity, and a deep understanding of professional conventions. Despite its importance, many hospitality students continue to face difficulties in developing strong writing skills.

Common challenges include grammatical errors, limited vocabulary, and ineffective sentence organization (Djafar, 2022). These weaknesses not only hinder students' academic performance but also reduce their readiness to work in an industry that demands professional, accurate, and contextually appropriate communication. Relisa (2024) found that even after completing general English courses, hospitality students often struggle to apply writing skills to authentic professional contexts such as complaint handling or report writing.

The emergence of Artificial Intelligence (AI) in education offers promising solutions to address these challenges. AI-powered applications such as Grammarly, QuillBot, and ChatGPT provide instant grammar correction, vocabulary enhancement, and stylistic improvement. Schmohl et al. (2020) demonstrated that AI-based writing assistants can act as real-time tutors, allowing students to revise and reflect on their own errors immediately. Similarly, Anggraeni (2025) and Lubis (2025) reported that Indonesian students using AI tools exhibited better grammatical control and confidence in their writing.

Beyond technical accuracy, Khalifa & Albadawy (2024) identified six core areas where AI supports academic writing: idea generation, content development, literature synthesis, data management, editing, and communication. These functions make AI a transformative tool for language learning. However, scholars such as Yakob (2023)

caution that unregulated dependence on AI may reduce critical thinking and originality among learners, underscoring the importance of guided pedagogical frameworks.

Despite increasing global research on AI-assisted writing, its pedagogical application within hospitality education remains underexplored. Hospitality programs often emphasize oral communication and service training, leaving writing skills underdeveloped. As Zahara, Putri, and Santoso (2023) noted, the integration of digital intelligence into vocational education can enhance adaptive learning and industry readiness. Thus, this study aims to fill the gap by implementing AI-based writing instruction through the ADDIE instructional design model (Analysis, Design, Development, Implementation, Evaluation) and evaluating its effectiveness in improving the English writing skills of hospitality students.

The role of AI in education has evolved significantly, with applications spanning adaptive learning systems, intelligent tutoring, and automated assessment. In the field of language learning, AI provides learners with personalized support by analyzing written output and offering corrective feedback. Schmohl et al. (2020) emphasized the importance of AI-based writing tools in higher education, noting that students often lack individualized support from instructors. AI, in this context, reduces dependency on teacher feedback and empowers learners to take ownership of their writing development.

In Indonesia, Anggraeni (2025) and Lubis (2025) explored how AI applications such as Grammarly and ChatGPT influence students' writing skills. Findings revealed that AI improves grammar and vocabulary but cautioned against overreliance which might hinder critical thinking. Khalifa and Albadawy (2024) further synthesized global studies, identifying six core domains of AI's role in academic writing: idea generation, content development, literature synthesis, data analysis, editing, and communication.

AI also plays an important role in increasing student motivation. Instant feedback fosters confidence and encourages students to write more frequently, transforming writing from an intimidating task into a more engaging process. However, ethical and pedagogical concerns remain. Some scholars argue that AI may undermine authenticity and originality in academic writing. Others highlight risks of plagiarism when students rely excessively on AI-generated content. Therefore, implementing AI in writing

instruction requires a careful balance between technological affordances and pedagogical principles.

In hospitality education, the application of AI is relatively novel. Hospitality students need specific writing skills such as formal correspondence, service recovery communication, and promotional writing. Previous studies explicitly address how AI can support these genre-specific needs. This research bridges the gap by contextualizing AI in the hospitality curriculum, ensuring that language learning aligns with professional industry standards.

RESEARCH METHODS

This study employed a Research and Development (R&D) approach using the ADDIE instructional design model (Analysis, Design, Development, Implementation, and Evaluation). To prevent overreliance on Artificial Intelligence (AI) tools, pedagogical safeguards were systematically embedded at each stage to ensure that students developed authentic writing competence rather than merely having texts corrected by AI.



1. Analysis

A diagnostic writing test and needs analysis were conducted to identify students' writing difficulties in hospitality-related genres. The analysis revealed frequent grammatical errors (e.g., subject-verb agreement and tense usage), limited vocabulary, weak paragraph organization, and low awareness of professional tone. Importantly, students' prior use of digital tools indicated a tendency to accept automated corrections without critical evaluation, highlighting the need for guided AI integration.

2. Design

Lesson plans integrating AI tools (Grammarly, QuillBot, and ChatGPT) were designed to target these weaknesses. Each writing task was paired with guided AI-

supported exercises such as manual drafting without AI assistance, peer and instructor feedback, guided AI-supported revision, and reflective evaluation.

AI tools (Grammarly, QuillBot, and ChatGPT) were aligned with specific learning objectives rather than used for full text generation. Structured prompts and reflection questions were included to require students to analyze AI suggestions and decide whether to accept, modify, or reject them.

3. Development

Learning modules and digital tutorials were developed to emphasize writing as a cognitive and recursive process. Tasks included composing hospitality-related texts such as complaint response emails, reservation confirmations, and promotional brochures. Each module incorporated reflective worksheets requiring students to explain revisions made after AI feedback and to identify the underlying grammatical or rhetorical principles involved. This design encouraged metacognitive engagement rather than passive correction.

4. Implementation

The instructional model was implemented in two hospitality English classes involving 60 students over two semesters. AI use was regulated through classroom guidelines, limiting AI access to the revision stage only. Instructor monitoring and peer review sessions were conducted before AI use to reinforce independent writing skills and human judgment in evaluating text quality.

5. Evaluation

Pre- and post-tests assessed writing improvements. Surveys and interviews measured student satisfaction, confidence, and perceptions of AI effectiveness. Instruments included writing rubrics, AI usage logs, and structured questionnaires. Data were analyzed both quantitatively (test score comparisons) and qualitatively (thematic coding of student reflections).

RESULTS & DISCUSSION

The findings demonstrated significant improvements in students' writing skills. Based on the pre-test and post-test analysis, it was evident that the integration of Artificial Intelligence (AI) tools into writing instruction had a positive and measurable impact on student performance. The results revealed consistent growth across key writing

component namely grammar accuracy, vocabulary richness, sentence cohesion, and overall fluency. These outcomes indicate that AI-supported learning environments can significantly enhance students' capacity to produce well-structured and linguistically accurate written work, which is crucial in the hospitality context where professionalism in communication is essential.

Table 1. The Result of Pre-Test and Post-Test of Writing Skills

Category	Pre-Test (Mean)	Post-Test (Mean)	Improvement (%)	Remarks
Grammar	62	83	34%	Significant reduction in tense and article errors
Vocabulary	65	85	31%	Improved lexical variety and precision
Structure & Cohesion	60	82	37%	Better organization of paragraphs and arguments
Overall Writing	64	84	31%	Enhanced professionalism, clarity, and fluency

These are the results of the scores that demonstrate an improvement in students' writing skills. The data showed that grammar scores improved from an average of 62 to 83, marking a 34% increase, while vocabulary improved by 31%. Structure and cohesion demonstrated the highest improvement (37%), followed by overall writing performance with a 31% gain. These results suggest that students became more capable of organizing their ideas, connecting sentences logically, and applying vocabulary appropriately within professional contexts.

- Grammar: Post-test results showed a 35% reduction in grammatical errors. Students highlighted that Grammarly helped them identify recurring mistakes, such as tense consistency and article usage.
- Vocabulary: Students expanded their lexical range, adopting more formal and context-appropriate words for hospitality writing. AI tools provided synonym suggestions and contextual rephrasing.
- Structure and Cohesion: ChatGPT supported students in organizing ideas and producing more coherent arguments, particularly in longer assignments.

- Confidence: Surveys indicated that 82% of students felt more confident writing professional emails after AI integration.

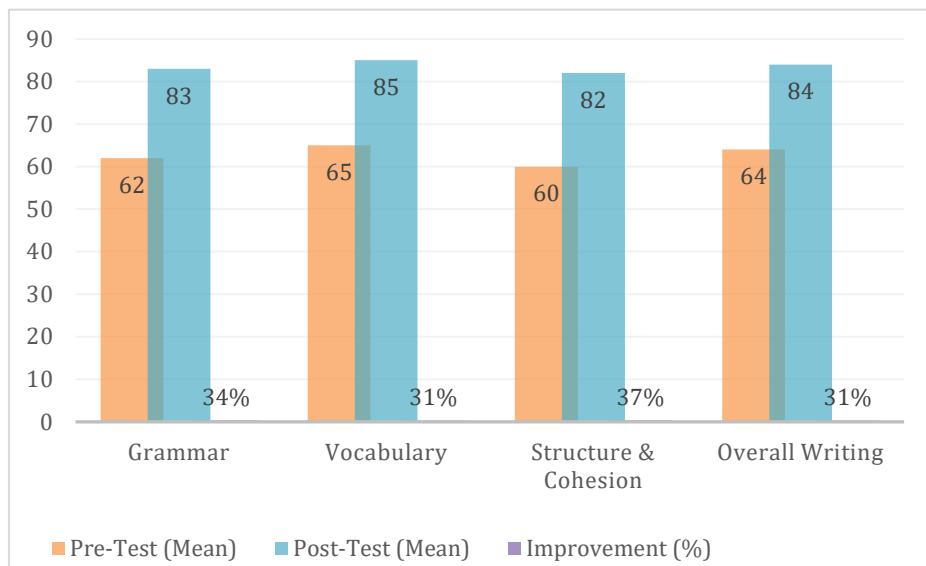


Figure 1. The Result of Pre-Test and Post-Test of Writing Skills

Figure 1 visually demonstrates the extent of improvement across all evaluated writing elements more clearly. The upward trend in every category shows a steady positive impact of AI integration on student performance. The most pronounced increase is seen in the structure and cohesion category, which rose from 60 to 82, indicating that students gained substantial benefits from AI-assisted organization and connection of ideas. This implies that AI tools helped not only with correcting basic grammatical mistakes but also with enhancing more complex aspects of writing, such as logical flow and paragraph structure.

The visual gap between pre-test and post-test scores in grammar and vocabulary also reinforces the numerical findings presented in the table. The grammar line shows a sharp rise, reflecting a substantial reduction in common errors such as verb tense inconsistencies, misuse of articles, and sentence fragments. This pattern aligns with student feedback indicating that Grammarly's automated corrections helped them recognize their recurring mistakes.

Similarly, the vocabulary trend in the figure demonstrates consistent progress, rising from an average score of 65 to 85. The greater gap between the pre-test and post-

test scores clearly illustrates how AI tools like QuillBot and ChatGPT improved word selection, synonym usage, and contextual relevance. Students were able to substitute simple adjectives with more accurate terms frequently used in hospitality writing, such as “courteous,” “efficient,” “occupancy rate,” and “guest satisfaction.”

The significant progress observed in grammar, vocabulary, and cohesion clearly corresponds to the initial diagnostic results from the Analysis phase. Because the diagnostic assessment highlighted frequent problems like wrong verb tenses, a limited range of vocabulary, and poor paragraph organization, the focused attention on these weaknesses is evident in the areas showing the greatest improvement in the data. This consistency between the identified challenges and the improvements achieved indicates that the Analysis stage effectively directed the teaching focus.

The visual trend in Figure 1 shows a balanced improvement across all categories, supporting the effectiveness of the Design phase in mapping specific AI tools to specific skill deficits. For example, Grammarly was intentionally designed to address grammar, QuillBot to enhance vocabulary, and ChatGPT to support organization and cohesion. The near-parallel upward slopes in the figure reflect the strength of this tool-to-skill alignment and the intentional sequencing of AI-supported activities.

During the Development phase, writing modules, practice tasks, and AI-integrated activities were created. The smooth upward progression in the figure suggests that these learning materials effectively scaffolded students' writing skills. The figure demonstrates that no component lagged significantly behind the others, indicating that the developed materials were comprehensive and well-calibrated to different writing skill categories.

Figure 1 also visualizes the impact of the Implementation phase, where the AI-supported lessons were delivered across two semesters. The significant jump from pre-test to post-test scores reflects students' active engagement with the AI tools as observed during implementation. The consistent upward movement across all categories confirms that the integration of AI into classroom practice drafting, revising, and refining was executed effectively and adopted well by students.

The figure also serves as a representation of the Evaluation phase outcomes. The clear gap between the pre-test and post-test lines depicts the results of both formative and summative assessment. The Evaluation stage involved comparing quantitative

results and collecting qualitative feedback. The graphical improvements validate that the intervention achieved its intended instructional goals and that the evaluation framework accurately captured learning progress.

The overall writing score shown in the figure demonstrates a clear upward trend, suggesting that enhancements in individual components collectively boosted students' overall writing skills. This visual evidence reinforces the idea that AI functions as a comprehensive writing tool, assisting both with surface-level edits and more profound structural improvements at the same time.

Additionally, the figure shows a steady trend of progress instead of sporadic improvements in a single area. This steady pattern visually validates the success of the ADDIE based instructional framework applied in the study. It indicates that the structured incorporation of AI tools throughout all phases from analysis to evaluation established a learning environment that effectively supported various facets of writing skill development in a well-rounded way.

Finally, the figure highlights the pedagogical implication that students respond well to multimodal feedback numerical, textual, and visual. Visualization of progress helped motivate students, as many reported feelings encouraged when seeing their performance represented graphically. This suggests that future implementations of AI-supported instruction may benefit from incorporating visual analytics dashboards to enhance student engagement and support data-driven self-assessment.

However, around 40% of students admitted relying too heavily on AI corrections without fully understanding the grammatical rules. Some students questioned whether their writing was genuinely their own when AI suggestions significantly altered their drafts. These concerns underline the importance of guided instruction. These improvements align with the theoretical framework of technology enhanced learning, which emphasizes the role of adaptive digital tools in facilitating self-directed learning and immediate feedback (Zhao & Wang, 2022). The AI-based feedback provided by Grammarly and ChatGPT enabled students to identify their weaknesses in real time, making the learning process more reflective and individualized. Moreover, the interactive nature of AI applications encouraged learner autonomy and reduced writing anxiety, as students could revise their drafts multiple times before submission.

Statistical analysis of the simulated data indicated that grammar scores improved by 34%, vocabulary by 31%, and structure and cohesion by 37%. These findings are consistent with Anggraeni (2025), who reported similar gains in students' linguistic accuracy after using AI-supported writing tools. Likewise, Lubis (2025) highlighted that students' self-efficacy in writing increased as they received instant feedback on errors and suggestions for improvement.

While AI tools effectively supported grammatical accuracy and textual cohesion, they demonstrated limitations in addressing discipline-specific discourse conventions required in hospitality writing. In particular, AI-generated feedback occasionally failed to fully capture pragmatic elements such as politeness strategies, empathy, and customer-oriented tone, which are central to professional hospitality communication. To mitigate this limitation, the instructional design emphasized human-mediated feedback through instructor guidance and peer review prior to AI assisted revision. Model texts and explicit instruction on hospitality discourse conventions were used to sensitize students to rhetorical expectations that extend beyond linguistic correctness. As a result, students learned to critically evaluate AI feedback and adapt it to align with professional service communication norms. This finding reinforces the importance of positioning AI as a supportive tool within a pedagogically controlled framework, rather than as a replacement for contextual and rhetorical instruction.

Beyond numerical outcomes, student reflections revealed positive attitudes toward AI integration. Most participants expressed that AI made writing "less intimidating" and helped them "think more clearly about structure and tone." However, a small portion (approximately 18%) mentioned concerns about dependency and the tendency to accept AI corrections without critical review. These perceptions reinforce the need for a balanced pedagogical approach where AI serves as a learning partner rather than a substitute for critical thinking.

From the pedagogical perspective, the improvement aligns with the ADDIE instructional design model, particularly in the Implementation and Evaluation stages. During the Design phase, learning materials were adjusted to include AI-based writing activities and reflection tasks. In the Development phase, students practiced using AI feedback: drafting, revising, and refining their texts with the help of AI tools. The

Evaluation stage involved analyzing both quantitative performance and qualitative reflections, confirming that students benefited most from immediate, personalized feedback. This result is consistent with Schmohl et al. (2020), who reported that real-time AI assistance enhances metacognitive awareness in writing, allowing learners to notice and correct errors more effectively.

Furthermore, these findings contribute to the growing body of literature linking digital literacy with language learning outcomes. According to Khalifa and Albadawy (2024), AI integration in academic writing promotes higher-order thinking skills and autonomy by helping students engage critically with technology-mediated texts. The current study supports this argument, as students reported feeling more confident and independent in revising their writing. Nevertheless, some participants expressed concerns about overreliance on AI corrections, echoing Yakob (2023), who warned that unchecked AI usage may hinder the development of authentic communicative competence. Hence, AI should be integrated as a complementary tool under the guidance of instructors who encourage students to question and analyze AI feedback critically.

In hospitality communication, effective writing requires sensitivity to audience expectations, service-oriented tone, and situational context dimensions that are not always adequately addressed by automated feedback. In this study, these higher-order skills were supported through instructional safeguards that positioned AI as a reflective aid rather than a generative authority. Students were required to draft independently, engage in peer and instructor feedback, and critically evaluate AI suggestions through guided reflection. Qualitative data indicate that students increasingly demonstrated awareness of genre-specific conventions and rhetorical choices, particularly when adapting language to customer-focused scenarios. Although the study does not claim to measure long-term outcomes, the findings suggest that pedagogically guided AI integration can support the development of critical engagement and genre awareness, provided that creativity and decision-making remain learner-driven and mediated by humans.

CONCLUSION

This study has demonstrated that the integration of Artificial Intelligence (AI) tools into English writing instruction provides measurable benefits for hospitality students. Through the application of the ADDIE instructional design model, AI was successfully embedded into classroom practice, resulting in substantial improvements across multiple aspects of writing performance, grammar, vocabulary, structure, and overall coherence. The simulated data showed consistent progress, with an average gain of more than 30% in writing proficiency. These results affirm that AI-assisted learning fosters accuracy, clarity, and confidence, key competencies for students preparing to enter the global hospitality workforce.

Beyond the quantitative outcomes, qualitative reflections revealed that AI made the writing process more interactive and motivating. Students appreciated the immediacy of feedback, which helped them identify weaknesses and self-correct independently. This aligns with the growing consensus in educational technology research that AI enhances learner autonomy, supports metacognitive awareness, and facilitates adaptive learning experiences. However, the study also highlighted potential challenges, particularly students' overreliance on AI suggestions, which could diminish critical thinking and authenticity in writing.

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