



The Efficacy of ChatGPT-Assisted Learning in Teaching Writing Descriptive Text to Indonesian English as Foreign Language (EFL) Students

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Article Info	Abstract
Received: 2026 - 06 - 01 Revised: 2026 06-18 Accepted: 2026 06-30 Keywords: ChatGPT, EFL, Descriptive Text, Writing Skills, AI-Assisted Learning, Indonesian Students DOI: 10.24256/ideasv14i1.10908 Corresponding Author: Soleman Dapa Taka sdapataka@gmail.com Universitas Nusa Cendana, Kupang, NTT	<i>This study investigates the efficacy of ChatGPT-assisted learning in teaching writing descriptive text to tenth-grade students at SMA Kristen Mercusuar Kupang, East Nusa Tenggara, Indonesia. With the rapid advancement of artificial intelligence (AI) technologies in educational settings, ChatGPT has emerged as a promising tool for supporting English as a Foreign Language (EFL) writing instruction. This study employed a quasi-experimental research design with a pre-test and post-test control group to measure the impact of ChatGPT integration on students' descriptive writing proficiency. A total of 60 tenth-grade students were divided into an experimental group (n = 30) and a control group (n = 30). The experimental group received writing instruction supplemented by ChatGPT interactions, while the control group followed the conventional teaching method. Data were collected through written descriptive text tasks and analyzed using an independent samples t-test. The results revealed that the experimental group demonstrated significantly higher post-test scores compared to the control group, with a mean difference of 12.4 points ($p < 0.05$). The ChatGPT-assisted group showed marked improvement in vocabulary use, grammatical accuracy, coherence, and descriptive language depth. Furthermore, student attitude questionnaires indicated a positive reception toward AI-assisted writing practice, with 83% of participants reporting increased confidence in English writing. These findings suggest that ChatGPT-assisted learning is an effective instructional strategy for enhancing descriptive writing skills among Indonesian EFL learners at the secondary school level. The study concludes with pedagogical implications for integrating AI tools into EFL writing classrooms and recommendations for future research.</i>

1. Introduction

The integration of technology into language education has long been recognized as a catalyst for enhancing student engagement and learning outcomes. In recent years, the emergence of artificial intelligence (AI)-powered tools has further revolutionized the landscape of English as a Foreign Language (EFL) instruction, offering unprecedented opportunities for personalized, interactive, and responsive learning experiences. Among the most prominent AI developments is ChatGPT—a large language model developed by OpenAI—which has garnered significant attention from educators and researchers worldwide for its potential to support language learning, particularly in writing tasks.

Writing is widely considered one of the most challenging language skills for EFL learners, requiring the simultaneous application of grammatical knowledge, vocabulary, organizational strategies, and creative thinking. In the Indonesian secondary school context, students are required to master various text genres as mandated by the national curriculum, including descriptive text. Descriptive writing demands the ability to paint vivid images through language, employing precise vocabulary and coherent sentence structures to portray a subject—be it a person, place, or thing—in a clear and engaging manner. Despite its importance, many Indonesian EFL students struggle with writing descriptive texts due to limited vocabulary, weak grammatical foundations, and insufficient exposure to meaningful writing practice.

SMA Kristen Mercusuar Kupang, located in Kupang, East Nusa Tenggara, represents a microcosm of the broader challenges faced by EFL students in eastern Indonesia, where access to quality English language resources and native-speaker input is comparatively limited. Teachers at this institution have reported that conventional writing instruction—characterized by teacher-centered explanation, limited feedback cycles, and restricted practice time—has yielded suboptimal results in developing students' descriptive writing competence. This situation necessitates the exploration of innovative instructional approaches that can supplement traditional methods and provide students with richer, more interactive writing experiences.

ChatGPT presents a potentially transformative solution to these instructional challenges. As a conversational AI capable of generating contextually appropriate responses, providing immediate feedback, suggesting vocabulary, correcting grammatical errors, and offering writing prompts, ChatGPT can function as an always-available writing assistant and practice partner. Several studies conducted in diverse EFL contexts have reported positive outcomes associated with AI-assisted writing instruction. For instance, research has demonstrated that AI writing tools can enhance students' motivation, reduce writing anxiety, and improve the quality of written output (Kohnke, Moorhouse, & Zou, 2023; Warschauer & Healey, 1998). However, the specific application of ChatGPT in teaching descriptive writing to Indonesian secondary school students remains

underexplored.

The theoretical underpinning of this study draws on Vygotsky's sociocultural theory, particularly the concept of the Zone of Proximal Development (ZPD). ChatGPT can serve as a scaffolding agent, providing the right level of linguistic support that students need to produce writing slightly beyond their current independent capability. When students interact with ChatGPT—asking for synonyms, requesting model sentences, or seeking feedback on their draft—they engage in a form of assisted performance that mirrors Vygotsky's notion of more knowledgeable other (MKO). This scaffolding function is particularly relevant for EFL learners who may lack the linguistic resources to independently produce proficient descriptive texts.

Additionally, this study is informed by the Technology Acceptance Model (TAM), which posits that perceived usefulness and ease of use are primary determinants of technology adoption in educational settings (Davis, 1989). Understanding how students perceive and interact with ChatGPT as a writing tool is essential for evaluating its practical viability in Indonesian EFL classrooms.

Given this backdrop, the present study aims to empirically investigate the efficacy of ChatGPT-assisted learning in improving tenth-grade students' descriptive writing skills at SMA Kristen Mercusuar Kupang. Specifically, this study seeks to answer the following research questions: (1) Is there a significant difference in descriptive writing scores between students who receive ChatGPT-assisted instruction and those who receive conventional instruction? (2) What aspects of descriptive writing—namely vocabulary, grammar, coherence, and descriptive language—are most significantly impacted by ChatGPT-assisted learning? (3) What are students' attitudes toward using ChatGPT as a writing learning tool?

The significance of this study lies in its contribution to the growing body of knowledge on AI integration in EFL education within the Indonesian context. By providing empirical evidence of ChatGPT's instructional efficacy at the secondary school level, this research offers actionable insights for teachers, curriculum developers, and education policymakers seeking to harness AI tools to improve writing instruction and student outcomes in EFL settings.

2. Method

This study adopted a quasi-experimental research design with a pre-test and post-test control group structure, which is appropriate for educational research in natural classroom settings where random assignment of participants is not feasible. The research was conducted at SMA Kristen Mercusuar Kupang during the second semester of the 2023/2024 academic year.

Participants consisted of 60 tenth-grade students drawn from two intact classes. Class X-A (n = 30) was assigned as the experimental group and received ChatGPT-assisted writing instruction, while Class X-B (n = 30) served as the control

group and underwent conventional writing instruction. Both groups were comparable in terms of prior English proficiency, as evidenced by their pre-test scores (experimental: $M = 61.3$, $SD = 6.2$; control: $M = 60.8$, $SD = 5.9$), with no statistically significant difference ($p = 0.74$).

The treatment was administered over eight weeks, with three 90-minute sessions per week. In the experimental group, students used ChatGPT via a school-provided tablet with supervised internet access. Students were guided to interact with ChatGPT for purposes such as generating vocabulary lists related to descriptive topics, requesting model descriptive sentences, asking for feedback on their drafts, and exploring alternative phrasings. A structured ChatGPT prompt framework was provided to guide students' interactions productively. The control group received instruction using the standard English textbook and conventional teacher-led feedback.

The primary instrument for measuring writing proficiency was a descriptive writing task administered as pre-test and post-test. Students were asked to write a descriptive text of 150–200 words about a place or person of their choice. Texts were scored by two trained raters using an analytic rubric adapted from Jacobs et al. (1981), assessing five dimensions: content, vocabulary, grammar, coherence/organization, and mechanics, with a total score of 100 points. Inter-rater reliability was established at $r = 0.89$, indicating high consistency. Student attitudes toward ChatGPT-assisted learning were measured through a 20-item Likert-scale questionnaire administered at the end of the treatment period. Quantitative data were analyzed using SPSS version 26, employing descriptive statistics and independent samples t-tests, with the significance level set at $p < 0.05$.

3. Result

The results of this study are presented in three sections corresponding to the research questions: overall writing performance, performance across writing sub-dimensions, and student attitudes toward ChatGPT-assisted learning.

Regarding overall descriptive writing performance, both groups showed improvement from pre-test to post-test. However, the experimental group demonstrated substantially greater gains. The experimental group's mean score increased from 61.3 ($SD = 6.2$) in the pre-test to 78.7 ($SD = 5.4$) in the post-test, representing a mean gain of 17.4 points. The control group's mean score increased from 60.8 ($SD = 5.9$) to 66.4 ($SD = 6.1$), yielding a mean gain of only 5.6 points. An independent samples t-test conducted on post-test scores revealed a statistically significant difference between the two groups ($t(58) = 8.73$, $p < 0.001$, $d = 2.25$), indicating a large effect size. These findings confirm that ChatGPT-assisted instruction produced significantly superior writing outcomes compared to conventional instruction.

A breakdown of results by writing sub-dimensions revealed that ChatGPT-assisted learning had a differential impact across the five assessed components.

Vocabulary showed the most pronounced improvement in the experimental group, with a mean score rising from 11.4 to 16.2 out of 20 (gain: 4.8 points), compared to the control group's modest gain from 11.2 to 12.6 (gain: 1.4 points). This difference was statistically significant ($p < 0.001$), suggesting that ChatGPT's ability to provide real-time vocabulary suggestions and synonyms was highly effective in expanding students' lexical range for descriptive writing.

Grammar accuracy also improved considerably in the experimental group, with mean scores increasing from 12.1 to 16.5 out of 20 (gain: 4.4 points), while the control group gained only 1.2 points (from 11.9 to 13.1). Students in the experimental group reported using ChatGPT to check grammatical structures such as present tense consistency and adjective placement, which are critical for descriptive texts. The difference was statistically significant ($p < 0.001$).

Coherence and organization scores improved from 12.3 to 15.9 in the experimental group (gain: 3.6 points) versus 11.8 to 13.0 in the control group (gain: 1.2 points), with a significant difference ($p < 0.001$). Experimental group students who utilized ChatGPT for outlining and organizing their descriptive paragraphs produced texts with clearer topic sentences, supporting details, and concluding remarks. The use of descriptive language—assessed as part of the content dimension—similarly showed a significant improvement: experimental group scores rose from 13.8 to 18.2 out of 25 (gain: 4.4 points) versus 13.5 to 15.3 in the control group (gain: 1.8 points; $p < 0.001$).

Mechanics scores, which assessed spelling and punctuation, showed the smallest differential between groups (experimental gain: 0.2 points; control gain: 0.1 points), suggesting that ChatGPT had minimal additional impact on mechanics beyond what conventional instruction achieved.

With respect to student attitudes, the questionnaire results indicated overwhelmingly positive perceptions of ChatGPT-assisted writing practice. On the dimension of perceived usefulness, 86.7% of experimental group students agreed or strongly agreed that ChatGPT helped them write better descriptive texts. Regarding ease of use, 80% of students found ChatGPT easy to navigate for writing tasks. Notably, 83.3% of students reported increased confidence in English writing after the treatment period, and 76.7% expressed a desire to continue using ChatGPT for writing practice in future lessons. Qualitative responses from an open-ended questionnaire item revealed that students particularly valued ChatGPT's immediate and non-judgmental feedback, its ability to provide vocabulary enrichment, and its availability outside of class hours for independent practice.

4. Discussion

The findings of this study provide robust empirical support for the efficacy of ChatGPT-assisted learning in enhancing descriptive writing skills among tenth-grade EFL students at SMA Kristen Mercusuar Kupang. The significant differences in post-test scores between the experimental and control groups, combined with

the large effect size ($d = 2.25$), indicate that the integration of ChatGPT into writing instruction produces meaningful and practically significant improvements in student writing performance. These results align with and extend prior research on AI-assisted language learning, contributing to the growing body of evidence supporting the use of large language models in EFL writing instruction.

The most striking improvement was observed in vocabulary use, which aligns with the known strengths of ChatGPT as a linguistic resource. Descriptive writing is inherently lexically demanding, requiring students to employ varied and precise adjectives, sensory language, and figurative expressions to create vivid mental images. For Indonesian EFL learners who typically have limited exposure to rich English vocabulary outside the classroom, ChatGPT's capacity to generate synonyms, provide contextually appropriate word choices, and model descriptive language use appears to have provided critical lexical scaffolding. This finding resonates with Godwin-Jones (2022), who argued that AI writing assistants function as dynamic vocabulary resources that can help bridge the lexical gap between learners and proficient writers.

The significant improvement in grammatical accuracy observed in the experimental group merits careful consideration. ChatGPT's ability to identify and correct grammatical errors in real time, and to explain grammatical rules in simple language upon request, appears to have accelerated students' grammatical development in ways that traditional teacher-led instruction could not fully achieve within the same timeframe. This is consistent with the findings of Kohnke, Moorhouse, and Zou (2023), who reported that EFL learners who used ChatGPT for grammar-focused writing practice demonstrated greater accuracy gains than peers using conventional methods. Importantly, students in the present study were not simply receiving corrected output from ChatGPT—they were guided by the teacher to analyze ChatGPT's corrections and reformulate their sentences, promoting deeper metalinguistic awareness.

The improvement in coherence and organization is particularly significant from a pedagogical standpoint, as text-level writing skills are generally considered more difficult to develop than word-level accuracy. The experimental group's use of ChatGPT for generating outlines and organizational frameworks appears to have helped students internalize the macro-structural conventions of descriptive texts, including the identification paragraph, followed by detailed description of specific features, and a concluding impression. This scaffolding function illustrates the applicability of Vygotsky's ZPD concept to AI-assisted writing instruction: ChatGPT effectively served as the more knowledgeable other, providing organizational guidance that enabled students to produce texts at a level of structural complexity beyond their independent capability.

The minimal differential in mechanics scores between the two groups suggests that conventional instruction was already reasonably effective in developing basic spelling and punctuation skills, and that ChatGPT's impact on

these surface-level features was marginal. This finding suggests that the value of ChatGPT in writing instruction lies primarily in higher-order writing competencies—vocabulary, grammar, and organization—rather than in mechanical accuracy. Future research may wish to explore whether more targeted use of ChatGPT for mechanics practice can produce meaningful gains in this dimension.

The highly positive student attitudes toward ChatGPT-assisted learning reported in this study are consistent with prior research on technology acceptance in EFL contexts (Davis, 1989; Warschauer & Healey, 1998). The finding that 83.3% of students reported increased writing confidence following the treatment is particularly encouraging, as writing anxiety has been identified as a significant barrier to EFL writing performance. ChatGPT's non-judgmental and immediately responsive nature appears to have created a psychologically safe space for students to experiment with language, make errors, and revise their work without fear of negative evaluation. This aligns with the affective filter hypothesis (Krashen, 1982), which posits that lower anxiety and higher motivation facilitate greater language acquisition.

Nevertheless, this study acknowledges several limitations that should be considered when interpreting its findings. First, the eight-week treatment period, while sufficient to produce statistically significant gains, may not be long enough to determine whether the improvements are sustained over time. Longitudinal research is needed to assess the durability of ChatGPT-assisted writing gains. Second, the study was conducted in a single school in Kupang, which limits the generalizability of findings to other educational contexts in Indonesia or elsewhere. Third, the guided use of ChatGPT in this study—facilitated by a structured prompt framework and teacher supervision—may not reflect the outcomes of unguided, autonomous student use. The quality of teacher facilitation and the design of ChatGPT interaction tasks are likely moderating variables that warrant further investigation. Finally, while the study measured writing quality holistically and analytically, it did not assess students' independent writing ability without ChatGPT access, leaving open questions about transfer of skills.

These limitations notwithstanding, the findings carry important implications for EFL writing pedagogy in Indonesia. The study demonstrates that ChatGPT can serve as a powerful instructional tool when integrated thoughtfully into the writing curriculum, with clear learning objectives, structured interaction guidelines, and adequate teacher facilitation. Rather than viewing ChatGPT as a replacement for teacher instruction, this study supports a blended approach in which ChatGPT augments teacher-led instruction by providing personalized, on-demand language support that teachers cannot feasibly provide to every student simultaneously.

5. Conclusion

This study has demonstrated that ChatGPT-assisted learning is an efficacious instructional approach for improving descriptive writing skills among tenth-grade EFL students at SMA Kristen Mercusuar Kupang. Students who received ChatGPT-assisted instruction significantly outperformed their peers in the control group across multiple dimensions of writing quality, including vocabulary, grammar, coherence, and descriptive language use. The large effect size and positive student attitudes further reinforce the potential of ChatGPT as a valuable addition to the EFL writing classroom toolkit.

These findings contribute to the empirical foundation for AI-assisted EFL writing instruction in the Indonesian context and suggest that the integration of ChatGPT can help address longstanding challenges in developing students' writing proficiency in resource-limited educational settings. Teachers and curriculum developers at the secondary school level are encouraged to consider the structured, scaffolded integration of ChatGPT into writing instruction, particularly for text genres that require rich vocabulary and clear organizational frameworks, such as descriptive text.

Future research should explore the long-term effects of ChatGPT-assisted writing instruction on independent writing skills, investigate optimal pedagogical designs for AI-human collaborative writing tasks, and examine the efficacy of ChatGPT across different text genres and proficiency levels. Cross-school and cross-regional studies would also strengthen the generalizability of findings. As AI technology continues to evolve, ongoing empirical investigation is essential to ensure that its integration into EFL education is evidence-based, ethically grounded, and pedagogically sound.

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