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Assessing the Efficacy of AI-Powered Writing Prompts in Enhancing Students' Writing Skills

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Abstract—**The quantitative study examines the effectiveness of artificial intelligence writing prompts in teaching English for Specific Purposes (ESP) to 221 students from technical disciplines. The survey findings indicated that between 60% and 70% of respondents found the prompts readable and helpful for improving their writing and for receiving feedback. However, only 54.8% of participants strongly supported the diversity of prompts. Structured activities were perceived as the most beneficial, specifically narrative reviews (68.8%), slang exercises (68.3%), and essay completions (65.1%). Sixty-one percent to seventy-five percent of students reported perceived improvements in their capabilities, with 74.2% indicating that their confidence and attitudes towards writing were enhanced. The research confirms that AI is an effective tool for structured writing activities in line with the principles of Vygotskian education. However, AI's potential to encourage creative activities is limited, underscoring the importance of further human-centered instruction. These results provide important insights into how ESP curricula should be developed and suggest that further research is needed in non-technical areas.**

Index Terms—**Artificial Intelligence, ESP, English writing skills, university students, writing prompts**

I. Introduction

Increasing globalization has made English writing proficiency essential in both academic and professional contexts; hence, individuals are expected to write proficiently in English not only in school but also in the workplace. Language software and other generic tools have been helpful, but more recent AI models like ChatGPT are transforming language learning. These tools can help students develop English proficiency by providing personalized writing assistance tailored to their needs and interests.

Despite these supports, students still struggle to master other, more specific writing skills, such as vocabulary, clarity, and structure. This issue is particularly challenging in ESP contexts, where students must learn discipline-specific language rules within a brief period, as they often lack sufficient time (Al-Khresheh et al., 2023; Campbell, 2019). This is worsened by the fact that teachers have a high workload, requiring them to provide detailed, personal feedback that is vital to student development (Lim & Phua, 2019).

Technology offers promising solutions to these long-standing challenges. Writing has become more convenient and flexible thanks to digital platforms (Al-khresheh et al., 2023; Zhao, 2022), and AI-powered writing assistants are leading the way. Such systems can help students write faster by providing instant, automated feedback on grammar, coherence, and organization (Ali El Deen et al., 2025). The existing body of evidence demonstrates that AI is effective in most educational contexts, including assisting autistic children in acquiring more than one language (Ali El Deen et al., 2025; Mohamed, 2025) or learning medical vocabulary (Mohamed et al., 2025a).

The body of literature on AI in education is growing rapidly, encompassing its technical foundation (Alotaibi & Alshehri, 2023) and practitioners' knowledge of its applications (Mohamed et al., 2025b). Increasing amounts of literature support its beneficial impact on learning. Experimental studies have reported recently that ChatGPT can substantially improve ESP writing skills (Jmaiel et al., 2025) and improve the motivation and engagement of learners (Alfaleh et al., 2025), which is consistent with the existing findings on its efficacy in the general writing competence enhancement (Yan, 2023; Liu et al., 2022).

Although there have been some positive developments, the research gap on the effectiveness of AI-generated writing prompts among ESP students remains large. Understanding of the design and impact of AI-generated prompts on students' skill acquisition and motivation in the ESP environment is deficient, although the use of tools such as ChatGPT to provide feedback and engagement in conversation is discussed. While previous studies have primarily examined the general use of AI to support ESP students' automated feedback and writing skills, limited attention has been given to the pedagogical design of AI-generated writing prompts and students' perceptions of different prompt types in ESP contexts. Additionally, few studies have systematically examined multiple prompt formats within a single instructional framework to identify which prompts are perceived as most effective for supporting writing development. This study examines how ESP learners perceive the effectiveness of AI-enhanced writing prompts on their writing development and motivational orientations. This research project will analyze students' perceptions and determine the usefulness of these resources to teachers in higher education in Saudi Arabia. The findings are intended to provide practical data on the application of AI to engage students and help them write better in some learning institutions. By evaluating a range of AI-generated writing prompts implemented throughout an academic semester, this study seeks to provide evidence on their perceived clarity, effectiveness, and contribution to writing development in ESP education.

To guide this investigation, the following research questions are proposed:

1. How do ESP students perceive the clarity and understandability of AI-generated prompts for improving English writing skills?
2. How do ESP students perceive the effectiveness of different AI-generated writing prompt types in supporting English writing development?
3. How do ESP students perceive the impact of AI-generated writing prompts on their writing skills, confidence, and attitudes toward learning English?

II. Literature Review

Studies of AI chatbots emphasize their dual nature in language learning. On the one hand, they offer great prospects for improving writing progress with automatic, real-time feedback on grammar, organization, and unity (Barrot, 2023). Their effectiveness in a wide range of educational settings, including the instruction of multilingual autistic students and the enhancement of medical term acquisition in nursing curricula, has also been confirmed by a growing body of evidence (Mohamed et al., 2025a).

Nevertheless, even these positive results do not exclude further discussion of whether AI can truly help improve the writing process in the long term or merely allow students to quickly complete the necessary tasks (Taskiran et al., 2024). Learner perceptions further complicate this issue: even though most students declare increased motivation, engagement, and overall acceptance of AI tools (Alfaleh et al., 2025; Jayapal, 2024), the issues of overreliance, the loss of skills, and dishonesty are quite reasonable (Dergaa et al., 2023; Fontenelle-Tereshchuk, 2024).

These opposite results highlight the need for systematic studies that combine learners' subjective experiences with objective performance indicators. The current quantitative study addresses this gap by examining how ESP learners perceive the effectiveness of various types of AI-generated prompts and their contribution to writing development.

A. The Underexplored Frontier: Prompt Engineering in ESP

Prompt engineering is another aspect of ESP teaching that is not studied extensively (Chacko, 2023). Since it plays a central role in determining AI output, it can be a determinant of successful AI-based writing pedagogy. The available frameworks underline goal alignment and systematic instructions as the key characteristics of well-designed prompts (Eager & Brunton, 2023; Pinzolits, 2024). However, these frameworks do not take into consideration such significant learner-focused variables as motivation, metacognition, or technological readiness- variables that were proven to play a major role in the ability of educators and learners to integrate AI successfully (Mohamed et al., 2025b).

Recent experimental research suggests that ESP writing performance can be improved through a structured set of prompt-related variables in AI interventions, although the nature of the variables that drive these improvements remains unclear. Specifically, few empirical studies exist on the effects of timeliness, task orientation, or audience focus in ESP writing (Jmaiel et al., 2025).

This study contributes to the literature by synthesizing three previously disconnected strands:

1. AI natural language processing capabilities,
2. pedagogical prompt-design principles, and
3. measurable learner performance outcomes.

Through this synthesis, the study proposes a more integrated model for designing AI-supported writing tasks in ESP education.

B. A Critical Analysis of AI in ESP Writing

Research on AI-assisted ESP writing reflects similarly complex and nuanced findings. Empirical evidence shows that AI-assisted teaching can result in statistically significant improvements, and often experimental groups perform better than control groups on specific writing tasks (Hwang et al., 2023; Su et al., 2023; Jmaiel et al., 2025). However, as these advantages are provided, there are always concerns about academic integrity, the potential overreliance on automated results, and the possible decline in critical thinking (Dergaa et al., 2023; Fontenelle-Tereshchuk, 2024).

This dichotomy is also manifested in the motivation of learners: some students note that interaction with AI tools brings them increased interest and confidence (Song & Song, 2023; Alfaleh et al., 2025), and others are afraid of becoming too reliant on AI as a linguist and rhetorical assistant (Silitonga et al., 2023).

Such difficulties are particularly acute in the ESP environment, where AI models may fail to provide domain-specific terms and genre-specific rhetorical forms. Besides, most of the literature to date has been conducted in general EFL classrooms rather than in an ESP setting (Rahman et al., 2022; Liu et al., 2021), creating a clear gap in the literature on AI-mediated writing in professional or discipline-specific settings.

C. Theoretical Foundations for AI-Powered Writing Prompts

This research draws on an integration of constructivist and sociocognitive theories to address these complexities. This study proposes that AI-delivered prompts can offer tiered support, thereby promoting learner autonomy, drawing on the self-regulated learning framework developed by Nilson and Zimmerman (2023) and Vygotsky's (1978) notion of scaffolding. These are supplemented by the Interaction Hypothesis and Focus-on-Form (Loewen, 2011): the former demonstrates how AI feedback facilitates learning by prompting parties to converse, and the latter ensures that shared data is accurate without interfering with communication.

To respond to the various writing scenarios, we apply the well-known concepts of ESP (Hutchinson & Waters, 1987) alongside modern principles of prompt engineering (Korzyński et al., 2023). Our strategy uses Sociocultural Theory (Lantolf, 2000) to frame AI as a mediator that supports human learning, countering risks like reduced psychological ownership (Joshi & Vogel, 2024) and style homogenization (Ippolito et al., 2022). We propose a pedagogical-technological model with flexible AI prompts that enhance learning while preserving student authorship, individuality, and creativity.

III. Methodology

A. Study Design

A quantitative classroom-based study was conducted over a 16-week period. A convenience sample of 221 undergraduates in an ESP major at a Saudi university was given weekly writing tasks in supervised computer labs, using 11 standardized ChatGPT prompts. In the final week, students were asked to complete a four-part online survey evaluating their experiences and perceptions.

B. Participants

This research included 221 students enrolled in ESP courses at a university in Saudi Arabia during the 2023–2024 academic year. To identify individuals who were free and willing to participate, convenience sampling was used. The sample included 104 students (47.1%) in Information Technology, 53 (24.0%) in Human Resources, 30 (13.6%) in Supply Chain, 19 (8.6%) in E-Commerce, and 15 (6.8%) in Accounting. Of the 129 male and 92 female students (58.4% and 41.6%), most (98.2%) were aged 18–24. The majority (64.7%) had a GPA of 3.0 or above, indicating strong academic performance. The sample's concentration in technical and business majors provides a solid basis for studying AI-assisted writing instruction in specialized academic contexts.

C. Instrumentation

(a) AI-Writing Prompts

As part of the study procedures, university students were given 11 suggested prompts (Table 1) to support their writing assignments throughout the semester. To evaluate the effectiveness of the prompts, the students were asked to complete an online survey at the conclusion of the semester.

TABLE 1
THE STUDY'S AI-WRITING PROMPTS

P1	Your role is a teacher. I want to improve my essay writing skills in English. Write for me three short essays in English, leaving some areas for me to complete. Then ask me to complete those sections, evaluate, and correct my responses. Ask me at least 10 questions about every essay.
P2	Your role is an English instructor. I want to improve my English writing skills. Write some paragraphs for me, leaving space for me to add the context. Ask me completion questions and then respond with corrections and evaluations.
P3	Your role is an English teacher. I want to improve my English grammar and spelling. Ask me some general questions where I can respond with a paragraph. Then evaluate my response for spelling and grammatical mistakes and guide me in detail on how to correct them.
P4	Your role is an English teacher. I want to improve my English writing and comprehension skills. Suggest a story, a short book, or a movie. Then ask me to write a review. Then evaluate my review with corrections and suggestions.
P5	Your role is an English conversation partner from the United Kingdom. I want to improve my English writing and conversational skills. Ask me general questions and evaluate my answers for spelling, grammatical, and contextual correctness. Also, give suggestions.
P6	Your role is an English teacher. As a student, I want to improve my English writing skills. Give me 20 contemporary English slang phrases and ask me to use them in sentences. Then evaluate and suggest the corrections.
P7	Your role is an English teacher. I want to improve my English writing skills. Give me a situation where I can write an application to my college administration. After that, evaluate my response and suggest corrections with an explanation.
P8	Your role is an English teacher. I want to improve my English writing skills. Give me a situation where I can write a letter to the Ministry of Education. After that, evaluate my response and suggest corrections with an explanation.
P9	Your role is an English teacher. I want to improve my English writing skills. Give me a situation where I can write an email to a company for a job. After that, evaluate my response and suggest corrections with an explanation.
P10	Your role is an expert poet. I want to improve my English writing skills. Give me a situation to write a poem. Then evaluate my response and provide corrections and suggestions, with explanations.
P11	Your role is an English teacher. I want to improve my English writing skills. Give me a 10-point agenda to improve my English writing skills. Also, provide an implementation plan for that agenda.

The components and arrangement of these prompts are listed in Table 2. The objective is to enhance writing abilities by providing unfinished paragraphs for completion, posing questions for further growth, and emphasizing the importance of corrections and evaluations in developing writing skills. These prompts aim to guide the AI model to function as a proficient English instructor.

TABLE 2
AI-WRITING PROMPT FRAMEWORK

Component	Example	Pedagogical Rationale
Role Specification	"Act as an English instructor..."	Establishes context and authority, mimicking teacher-student interaction (Korzyński et al., 2023).
Learning Goal	"Improve paragraph coherence."	Aligns with ESP objectives (e.g., clarity, grammar) and measurable outcomes.
Structured Task	"Write a paragraph with blanks for completion."	Scaffolds writing practice; balances guidance with autonomy (Hyland, 2003).
Feedback Mechanism	"Provide corrections and explanations."	Ensures formative assessment, which is critical for language acquisition.
Progressive Complexity	"Revise the paragraph using academic vocabulary."	Adapts to learner proficiency, avoiding cognitive overload (Sweller, 2011).

Table 2 presents the AI-Writing Prompt Framework, detailing key instructional elements (e.g., role specification, gradual complexity) that support clarity, scaffolding, feedback, and cognitive processes in AI-assisted writing for ESP learners.

(b) Preparation of AI-Writing Prompts

AI-writing prompts were developed using established pedagogical approaches and recent research on AI prompt engineering (Huang et al., 2023; Korzyński et al., 2023; Rahayu et al., 2024). Following a comprehensive literature review, the key elements of effective writing instruction were identified and organized into the framework shown in Table 2. This included:

Research-Based Foundations

• Scaffolding techniques adapted from ESL writing pedagogy
• Formative assessment principles for continuous improvement
• Feedback mechanisms shown to enhance language acquisition

Theoretical Grounding

The prompts integrate:

• Cognitive Learning Theories: Constructivist approaches (Vygotsky, 1978) emphasize scaffolded learning that connects prior knowledge to new skills through structured support.

• ESL Writing Pedagogy: Guided practice (Hyland, 2003) and formative feedback (Black & Wiliam, 1998) promoting gradual, continuous skill development.

• AI Prompt Engineering: Strategies from Huang et al. (2023) and Rahayu et al. (2024) to optimize clarity, engagement, and adaptability.

(c) Instrument Development and Validation

The questionnaire for the study was carefully designed to evaluate three essential aspects of AI-driven writing prompts: clarity, effectiveness, and learning outcomes.

- Section A collected demographic data, including gender, major, age, and GPA.
- Section B (5 items) was on general prompts and provided 5 Likert items (1 = Strongly Disagree to 5 = Strongly Agree) to evaluate the prompts in terms of clarity, pedagogic interest, and utility (α = .833).
- Section C was an assessment of the effectiveness of 11 various prompts on structured, creative, and metacognitive tasks on a scale between Not Effective and Very Effective (α = .956).
- Section D (5 items) evaluated the advantages in the learning views, self-confidence, and writing skills on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) (α = .744).

The literature was extensively reviewed, and the field professionals were consulted to identify the appropriate constructs to include in the questionnaire. The questionnaire was reviewed by a panel of 10 EFL and EdTech experts, who agreed on 90% of the points. The validity of the instruments was established through expert review and a pilot test (n = 67), which demonstrated high reliability across all scales (α = .833–.956).

The 11 AI writing prompts were rigorously evaluated. First, three experts rated them for ESP relevance, clarity, and bias (mean score: 4.8/5). Then, pilot tests with 67 students assessed task comprehension, difficulty, and feedback functionality (Table 3). The final prompt design incorporated:

• Role definition (e.g., You are an English instructor...)
• Gradually increasing complexity of written works
• Formative feedback loops
• Moderation of structured (6) and creative (5) assignments

The students completed 89% of the prompts, indicating that the tasks were neither too easy nor too boring. This systematic development process yielded positive results. Notably, the guidance did not include the usual problems with AI, such as excessive handholding, but it provided sufficient guidance. These findings imply that these AI prompts can be used in the context of ESP instruction, are challenging enough to keep students interested, and can yield noteworthy learning outcomes.

TABLE 3
RESULTS FROM THE PILOT STUDY (N = 67)

Metric	Frequency	Percent
Clarity		
Very unclear	16	25.4
Unclear	3	4.8
Neutral	10	15.9
Clear	13	20.6
Very clear	21	33.3
Overall mean: 3.32±1.60		
Relevance		
Not at all relevant	6	9.5
Slightly relevant	5	7.9
Neutral	12	19.0
Relevant	19	30.2
Very relevant	21	33.3
Overall mean: 3.70±1.28		
Engagement		
Not engaging	6	9.5
Slightly engaging	9	14.3
Neutral	11	17.5
Engaging	20	31.7
Very engaging	17	27.0
Overall mean: 3.52±1.29		
Difficulty		
Very difficult	8	12.7
Difficult	5	7.9
Neutral	10	15.9
Easy	21	33.3
Very easy	19	30.2
Overall mean: 3.60±1.34		
Understanding		
No	7	11.1
Yes	56	88.9
Overall mean: 1.89±0.32		

The average clarity score in the pilot study examining AI prompts was 3.32 ± 1.60. 33.3% of respondents said the prompts were very clear, 20.6% said they were clear, and 25.4% said they were very unclear. The mean total of 3.70 ± 1.28 was high, as 33.3% reported that the prompts were very relevant and 30.2% reported that they were relevant. The mean engagement score was 3.52 ± 1.29. 27.0% of respondents indicated that the prompts were very interesting, and 31.7%

replied that they were interesting. The average score of 3.60 ± 1.34 indicates that most participants found the prompts relatively easy to use. All in all, 30.2% of the participants rated the prompts as very easy, 33.3% as easy, and 88.9% stated that they understood them clearly (M = 1.89 ± 0.32). The pilot study showed that participants' perceptions of the prompts were generally positive, with participants believing they were relevant, engaging, and user-friendly. The mean scores for relevance (3.70), engagement (3.52), and ease of use (3.60) are high, indicating their efficacy and the potential for further enhancements and broader use.

(d) Scale Reliability

As shown in Table 4, the scale has high reliability, with Cronbach's alpha exceeding 0.7 across all three dimensions (GE, SPA, and OIP), indicating validity above the accepted level. Good reliability was found with GE (α > .8), OIP (α > .7), and SPA (α > .9).

TABLE 4
RELIABILITY ANALYSIS OF SCALE DIMENSIONS

Questionnaire Part	Cronbach's Alpha
General Evaluation (GE)	0.833
Specific Prompt Assessment (SPA)	0.956
Overall Improvement Perception (OIP)	0.744

The reliability of the scale items for each dimension is illustrated in Figure 1.

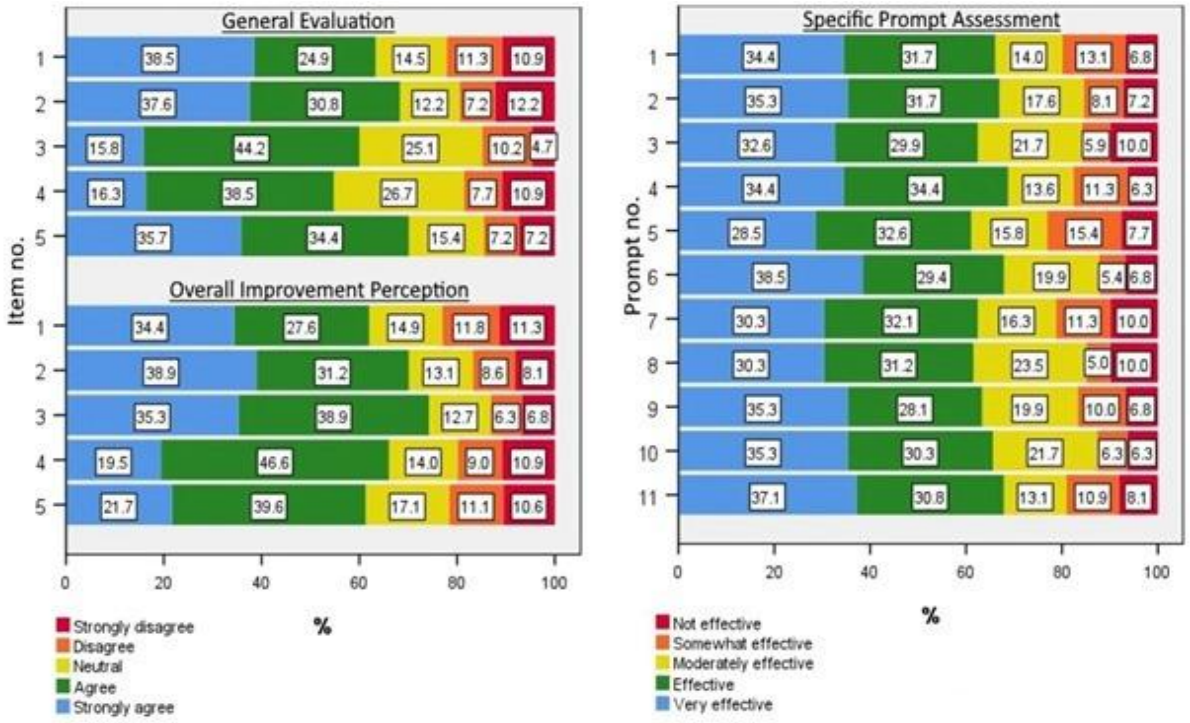

Figure 1. The Reliability Coefficients for All Scale Items Across the Study's Dimensions

TABLE 5
RESULTS OF ONE-WAY ANOVA EXAMINING PROMPT EFFECTS ON PARTICIPANT RESPONSES

Source	Degrees of Freedom	Mean Square	F-statistic	p-value
Between Groups	4	1.00	2.962644	0.018931
Within Groups	210	1.00		
Total	214			

In Table 5, a one-way ANOVA was used to examine whether participants' responses varied across prompt types. The analysis revealed that the type of prompt had a statistically significant effect on participants' responses, F (4, 210) = 2.96, p = .019. The corresponding effect size (partial η2 = .053) indicates that the effect is rather small to moderate; that is, prompt type explained about 5.3% of the variance in participants' ratings. This indicates that the prompt type significantly affected participants' ratings of the writing tasks.

(e) Prompt–Questionnaire Alignment Protocol

To guarantee construct validity and create a recognizable connection between the writing prompts produced by AI and the items on the questionnaire, we introduced the following alignment procedure in Table 6:

1. Explicit Mapping Framework

Each prompt (P1–P11) was systematically mapped to:

- Targeted Writing Skills (e.g., grammar, cohesion, formal tone)
- Corresponding Questionnaire Items (Section B/C/D)
- Theoretical Basis (e.g., scaffolding, formative feedback)

TABLE 6
COMPREHENSIVE ALIGNMENT MAPPING

Prompt	Description	Targeted Skill(s)	Questionnaire Items	Theoretical Basis	Expert Alignment Score (1–4)
P1–P2	Paragraph completion with blanks	Cohesion, Contextual understanding	B1, B2, B5, C1, C2, D6	Scaffolding (Vygotsky, 1978)	3.9
P3	Grammar/spelling Q&A	Grammar accuracy	B2, B5, C3, D6, D7	Focus-on-Form (Loewen, 2011)	4.0
P4	Story/movie review	Critical analysis, Descriptive writing	B3, B4, C4, D8, D10	Genre-Based Pedagogy (Hyland, 2003)	3.7
P5	Conversational Q&A with feedback	Speaking-to-writing transfer	B2, B3, C5, D7	Interaction Hypothesis (Long, 1996)	3.8
P6	Slang/phrase usage	Informal register, Lexical diversity	B4, C6, D10	Sociocultural Theory (Lantolf, 2000)	3.5
P7–P9	Formal applications (college/job/ministry)	Formal register, Structure	B2, B4, C7, C8, C9, D6, D9	ESP Principles (Hutchinson & Waters, 1987)	4.0
P10	Poem writing	Creative expression, Imagery	B3, C10, D8, D10	Process Writing (Flower & Hayes, 1981)	3.6
P11	10-point improvement agenda	Metacognitive planning	B2, B5, C11, D6, D7, D9	Self-Regulated Learning (Nilson & Zimmerman, 2023)	3.4

***** *Questionnaire sections:* B1-B5 (General), C1-C11 (Prompt-specific), D6-D10 (Overall)

D. Data Collection Procedures

Undergraduate students from five applied disciplines, Information Technology, Human Resources, Supply Chain Management, E-Commerce, and Accounting, engaged in a 16-week study incorporating AI-assisted writing tasks. With permission, participants completed weekly supervised lab tasks using 11 ChatGPT prompts for structured and creative writing. A final week survey assessed demographics, prompt effectiveness, and perceived writing improvement. A seven-day controlled protocol enabled a consistent test of AI-supported writing instruction.

Data collection occurred on a secure site. The online survey was sent to participants who were advised to complete it at their own pace. The questionnaire was self-administered, so respondents provided their answers independently. Clarity in instructions and recommendations was provided to ensure that the questionnaire was properly filled. The data were collected within a fixed time frame to ensure participants had sufficient time to complete the questionnaire.

E. Data Analysis

A multimodal data analysis method was used to test the effectiveness of AI-driven writing prompts. Descriptive statistics were used to summarize the sample characteristics, which include gender, major, age group, and GPA. Frequency distributions were used to evaluate the clarity, effectiveness, engagement, and variety of prompts based on responses to Likert-scale questions in the sections Evaluating Writing Improvement Prompts and Specific Prompt Assessment.

To determine participants' reactions to their writing skills, a 5-point effectiveness scale was used to assess them in detail across 11 prompts. In the Overall Perception section, the study used a Likert-scale analysis of responses to examine participants' perceptions of the effects of AI-powered prompts on their writing skills, confidence, referral probability, attitudes, and valuation of diversity. A comparative analysis was conducted to identify trends and contrasts in participants' responses to various prompts and Likert-scale items.

F. Ethical Considerations

The research considered ethics at every stage. Each participant obtained informed consent before involvement, ensuring that participation was voluntary and personal. Only the researchers had access to the securely kept data. Confidentiality and anonymity of the study participants were strictly ensured throughout the study. The research was guided by the ethical considerations and standards set by the university's research ethics committee to ensure ethical conduct and safeguard the rights and welfare of research participants.

IV. Results

A. Evaluating Writing Improvement Prompts

As indicated in Table 7, of the 5 items, most participants responded positively, with agreement levels ranging from 60% to 70% (based on items). In particular, the participants were satisfied with the prompts and their questions regarding their clarity and understanding, their effectiveness in improving English skills, student interest during the exercises, and feedback. Nevertheless, in one question, which concerned the range of prompts and their role in an effective approach to skill development, a little over half of the respondents (54.8%) answered affirmatively. It should be noted that, in this case, we mean the joint action of the responses 'agree' and 'strongly agree,' that is, the agreement.

Table 7
Frequency Distribution of Responses to the Evaluating Writing Improvement Prompt Items

Item	SD n	SD %	D n	D %	N n	N %	A n	A %	SA n	SA %
The provided prompts were clear and easy to understand.	24	10.9	25	11.3	32	14.5	55	24.9	85	38.5
The prompts effectively guided me in improving my English writing skills.	27	12.2	16	7.2	27	12.2	68	30.8	83	37.6
The prompts were engaging and kept my interest throughout the exercises.	10	4.7	22	10.2	54	25.1	95	44.2	34	15.8
The variety of prompts provided a well-rounded approach to skill improvement.	24	10.9	17	7.7	59	26.7	85	38.5	36	16.3
The feedback received on completed prompts was helpful for my learning.	16	7.2	16	7.2	34	15.4	76	34.4	79	35.7

B. Specific Prompt Assessment

Table 8 shows that across all 11 prompts, many participants (ranging from 61% to 69%) rated them as effective or very effective. This indicates widespread satisfaction with the prompts' effectiveness among participants.

Table 8
Frequency Distribution of 5-Point Effectiveness Ratings for Specific Prompts

Prompt	NE n	NE %	SE n	SE %	ME n	ME %	E n	E %	VE n	VE %
Three short essays with completion sections.	15	6.8	29	13.1	31	14.0	70	31.7	76	34.4
Paragraph completion with context questions.	16	7.2	18	8.1	39	17.6	70	31.7	78	35.3
General questions for paragraph writing, focusing on grammar and spelling.	22	10.0	13	5.9	48	21.7	66	29.9	72	32.6
Suggesting a story or movie for a review.	14	6.3	25	11.3	30	13.6	76	34.4	76	34.4
English conversation with spelling, grammar, and contextual evaluation.	17	7.7	34	15.4	35	15.8	72	32.6	63	28.5
Using contemporary slang and phrases in sentences.	15	6.8	12	5.4	44	19.9	65	29.4	85	38.5
Writing an application to the college administration.	22	10.0	25	11.3	36	16.3	71	32.1	67	30.3
Writing a letter to the Ministry of Education.	22	10.0	11	5.0	52	23.5	69	31.2	67	30.3
Writing an email to a company for a job.	15	6.8	22	10.0	44	19.9	62	28.1	78	35.3
Writing a poem based on a given situation.	14	6.3	14	6.3	48	21.7	67	30.3	78	35.3
10-point agenda to improve writing skills with an implementation plan.	18	8.1	24	10.9	29	13.1	68	30.8	82	37.1

Note. NE = Not Effective; SE = Somewhat Effective; ME = Moderately Effective; E = Effective; VE = Very Effective.

As shown in Table 8, writing prompts can effectively enhance participants' writing competence, as highlighted in the Specific Prompt Assessment. Participants reported high levels of satisfaction with the prompts' effectiveness, with positive ratings ranging from 61% to 69%. The prompts identified as significant were creating three short essays with completion parts, paragraph completion with context questions, and suggestions for a story or movie to be reviewed, with 65.1%, 67%, and 68.8% of the participants rated them as effective or very effective. Similarly, questions on English conversation evaluation, contemporary slang, and phrase receptiveness yielded responses of 61.1% and 68.3% among the interviewees, respectively. The combined results of these studies indicate that AI-based writing prompts have promising potential to positively influence respondents' writing skills across broad topics and varied formats.

C. Overall Improvement Perception

Table 9 shows that all the items under the overall improvement subtopic have been agreeable (agree/ strongly agree) by many students at a percentage of between 61% and 75%, depending on the item. As a rule, most of the participants expressed the following sentiments when questioned on the prompts after using them: (1) a significant improvement in the writing ability, (2) more confidence in the writing skills, (3) ready to recommend the prompts to other people who require to improve their writing, (4) the diversified styles of learning that the prompts offered, and (5) the effect that the prompts had on their attitude towards learning English.

TABLE 9
DISTRIBUTION (N, %) OF OVERALL IMPROVEMENT PERCEPTION RESPONSES

Item	SD	D	N	A	SA
Engaging with these prompts significantly enhanced my English writing skills.	25 (11.3%)	26 (11.8%)	33 (14.9%)	61 (27.6%)	76 (34.4%)
I feel more confident in my English writing skills after using these prompts.	18 (8.1%)	19 (8.6%)	29 (13.1%)	69 (31.2%)	86 (38.9%)
I would recommend these prompts to others looking to improve their English writing skills.	15 (6.8%)	14 (6.3%)	28 (12.7%)	86 (38.9%)	78 (35.3%)
The prompts positively influenced my overall attitude towards learning English.	24 (10.9%)	20 (9%)	31 (14%)	103 (46.6%)	43 (19.5%)
The diversity of prompts caters to different learning styles.	23 (10.6%)	24 (11.1%)	37 (17.1%)	86 (39.6%)	47 (21.7%)

V. DISCUSSION

A. AI as a Digital Scaffold: A Sociocultural Perspective

Rates of 60%–70% suggest that participants perceived AI-generated prompts positively, particularly for structured writing activities. This finding is consistent with previous studies reporting that AI-supported writing tasks may enhance learner engagement and writing performance (Jmaiel et al., 2025; Song & Song, 2023). The results support Vygotsky's (1978) notion of scaffolding, as the prompts provided structured guidance and immediate feedback throughout the writing process. However, the relatively lower ratings for prompt diversity suggest that structured support alone might not fully address learners' preferences for varied and creative writing experiences.

B. The Nuanced Efficacy of AI-Generated Feedback

The findings indicate a clear pattern: students generally perceived AI-generated prompts as useful, particularly for producing coherent and grammatically accurate texts. It follows the findings of the studies that have shown the effectiveness of AI to deliver structured assistance in a timely manner (Saetra, 2025). The importance of clear scaffolding is also supported by the fact that structured activities, including multi-stage essay completions, perform better (68.8%) than creative language activities. The high importance of professional writing assignments, such as emails and job applications, indicates a strong potential for AI in genre-specific ESP training to meet educational objectives while addressing the realistic demands of communication (Hutchinson & Waters, 1987).

Despite these advantages, AI feedback has drawbacks. Some participants observed inconsistencies, which is supported by previous studies: AI outputs may not be emotionally rich or precise (Lingard, 2023; Alghannam, 2024). This deficiency implies that an additional model is needed, in which teachers would offer contextual, motivational, and subtle support that machines cannot, while AI would monitor first and provide routine feedback (Burner et al., 2025; Link et al., 2024). However, because the findings are based on learners' perceptions rather than objective measures of writing performance, the reported benefits should be interpreted with appropriate caution.

C. Learner Perceptions: Confidence, Motivation, and the Human Element

The findings indicate positive learner perceptions: 74.2% of participants reported greater confidence and positive attitudes, and between 61% and 75% reported improvements in writing-related outcomes. (Ulla et al., 2023; Alfaleh et al., 2025). Additionally, 39.6% felt the prompts matched their learning style, highlighting the need for flexible, adaptive AI.

However, these positive outcomes should still be approached with pedagogical caution. The teacher's role remains essential. Ultimately, AI can help teachers allocate more time to mentoring students and fostering creativity and critical thinking, thanks to its speed, by providing more individualized mentoring and guidance (Heffernan & Heffernan, 2014). With AI analytics, teachers will be able to determine what their students need and provide the necessary support (Alasadi & Baiz, 2023). According to Burkhard (2022), AI is not meant to replace our communication skills or the relevance of our interactions with other humans as we learn.

D. Educational Implications and Future Directions

This has three significant implications:

1. Differentiated Prompt Design: The varying degrees of utility of various prompts imply that AI integration should be thought through. AI appears to be more effective for structured tasks than for creative writing activities, which require greater human–AI collaboration. Prompts with clear structural assistance should be used first in designing a curriculum, particularly for writing academic and professional texts.
2. Developing Feedback Literacy: Even though 70.1% of students found AI-generated feedback helpful, it needs to be cultivated by developing feedback literacy - the ability to evaluate AI-generated feedback critically and implement it wisely rather than blindly (Boudouaia et al., 2026; Burkhard, 2022).

3. Capitalizing on motivational advantages: The confidence and positive attitude increases reported indicate that AI may serve as a useful motivational tool, particularly when real-life tasks are involved. This aligns with theories of motivation, which focus on relevance and authenticity (Boudouaia et al., 2026).

VI. Conclusion

This research found that AI-generated writing prompts were well received: students rated them as easy, impactful, and entertaining, with particularly helpful feedback. Participants perceived that AI prompts may offer benefits such as improved writing skills, increased confidence, and a more positive attitude toward learning English.

However, limitations exist. First, the study used a limited range of prompts, which may not represent the full diversity of educational AI prompts. Future research should include more prompt types covering a broader set of learner skills. Second, methodological issues limit the applicability of the results, including the use of a convenience sample related to academic communities and the study's focus on short-term, immediate effects. These limitations imply that follow-up studies are necessary, including longitudinal studies to establish the long-term effects, interdisciplinary comparisons, and pre-post interventions to track the developmental effects of AI-supported writing prompts.

In addition, AI-generated feedback is inherently variable and inconsistent due to differences in model behavior, interpretation of the situation, or prompt phrasing. Such inconsistency may affect learners' outcomes, and it must be taken into account when explaining the results.

However, the results also have important pedagogical implications. The study’s findings reveal that ESP learners perceived that AI writing prompts could provide personalized writing support. Teachers must consider different types of prompts and combine AI-based tools to develop well-planned educational strategies that fully leverage students' writing development and engagement in the process. Future research should incorporate objective measures of writing performance to examine the actual impact of AI-generated prompts on writing development, as the current study relied only on self-reported perceptions.

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