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Exploring The Roles of ChatGPT in Enhancing Writing Accuracy Among Undergraduate EFL Learners at a Public University in Battambang

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ABSTRACT

ChatGPT is one of the large language models among artificial intelligence tools being integrated to support language and academic writing in higher education. This research was conducted with clear purposes: (1) to examine the roles of ChatGPT in enhancing the writing accuracy of undergraduate EFL learners; (2) to investigate the challenges and limitations students face when using ChatGPT for writing improvement; (3) to identify whether there are differences between male and female undergraduate students in their educational comprehension and perceptions toward using ChatGPT in English writing skills. The study was conducted quantitatively, with 226 undergraduate students participating via a Google Forms survey administered through purposive sampling. Roles, Challenges, and perceptions were measured with a 5-point Likert-scale instrument and presented in both inferential and descriptive statistics. Results revealed that EFL students heavily use ChatGPT for writing assistance, reporting for grammar error identification and correction (M = 3.78, SD = 0.96) and sentence clarity enhancement (M = 3.72, SD = 0.83). Regarding general perspectives, students valued ChatGPT for fast global information retrieval (M = 3.69, SD = 0.89), while confidence in relying on its output was lower (M = 3.35, SD = 0.89). Major challenges were found in proper citation and academic attribution (M = 3.74, SD = 0.81), and overly complex or technical outputs (M = 3.72, SD = 0.77). A statistically significant gender difference in confidence from inferential analysis with an independent samples t-test was indicated (t (224) = 2.88, p = .004), with male students rated on self-assessed confidence (M = 3.75) while female students rated (M = 3.51). However, there is no statistically significant difference across academic year cohorts (p > .05) analyzed with One-Way ANOVA. ChatGPT is valued as a writing tool for assistance with grammar correction and draft enhancement among undergraduate students, while challenges related to verifying information, practicing citations, and varying self-confidence between genders were found as constraints to ChatGPT adoption. Practitioners should consider digital literacy training to master the effectiveness of AI writing accuracy.

Kata Kunci:
Akurasi Penulisan;
Pembelajaran EFL;
ChatGPT;
Kecerdasan Buatan;

ABSTRAK

ChatGPT adalah salah satu model bahasa besar di antara alat kecerdasan buatan (artificial intelligence) yang diintegrasikan untuk mendukung pemelajaran bahasa dan penulisan akademik di perguruan tinggi. Penelitian ini dilakukan dengan tujuan yang jelas: (1) untuk menguji peran ChatGPT dalam meningkatkan akurasi penulisan pembelajar EFL (English as a Foreign Language) tingkat sarjana; (2) untuk menyelidiki tantangan dan keterbatasan yang dihadapi mahasiswa saat menggunakan ChatGPT untuk peningkatan kualitas penulisan; (3) untuk mengidentifikasi apakah terdapat perbedaan antara mahasiswa laki-laki dan perempuan dalam pemahaman edukatif serta persepsi mereka terhadap penggunaan ChatGPT dalam keterampilan menulis bahasa Inggris. Penelitian ini dilakukan secara kuantitatif, dengan 226 mahasiswa tingkat sarjana berpartisipasi melalui survei Google Forms yang disebarkan menggunakan teknik purposive sampling. Peran, tantangan, dan persepsi diukur menggunakan instrumen skala Likert 5 poin dan disajikan dalam statistik inferensial maupun deskriptif. Hasil penelitian mengungkapkan bahwa mahasiswa EFL sangat memanfaatkan ChatGPT untuk bantuan penulisan, terutama dalam mengidentifikasi dan mengoreksi kesalahan tata bahasa (M = 3.78, SD = 0.96) serta meningkatkan kejelasan

kalimat (M = 3.72, SD = 0.83). Terkait pandangan umum, mahasiswa mengapresiasi ChatGPT untuk penarikan informasi global yang cepat (M = 3.69, SD = 0.89), sedangkan tingkat keyakinan untuk bergantung pada hasil (output) AI tercatat lebih rendah (M = 3.35, SD = 0.89). Tantangan utama ditemukan pada sitasi dan atribusi akademik yang tepat (M = 3.74, SD = 0.81), serta luaran yang terlalu kompleks atau teknis (M = 3.72, SD = 0.77). Analisis inferensial dengan independent samples t-test menunjukkan adanya perbedaan keyakinan yang signifikan secara statistik berdasarkan gender (t(224) = 2.88, p = .004), di mana mahasiswa laki-laki memberikan penilaian lebih tinggi pada keyakinan diri (M = 3.75) dibandingkan mahasiswa perempuan (M = 3.51). Namun, tidak terdapat perbedaan yang signifikan secara statistik di antara kohort angkatan akademik (p > .05) berdasarkan analisis One-Way ANOVA. ChatGPT dinilai sebagai alat bantu penulisan yang bermanfaat untuk koreksi tata bahasa dan penyempurnaan draf di kalangan mahasiswa, meskipun tantangan terkait verifikasi informasi, praktik sitasi, serta variasi rasa percaya diri antargender menjadi kendala dalam adopsi ChatGPT. Para praktisi sebaiknya mempertimbangkan pelatihan literasi digital untuk mengoptimalkan efektivitas akurasi penulisan berbasis AI.

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1. INTRODUCTION

Artificial intelligence (AI) has endured rapid integration into several sectors, including education, where it has quickly grasped attention for scholarly discourse. The role of AI (Artificial Intelligence) is growing rapidly in the creative writing environment, as the technology produced can help writers enrich their language and produce creative stories. Fitria (2023) stated that AI (Artificial Intelligence) writing systems offer critical educational backing. This encompasses recommendations that can ameliorate writing quality, including the modification of textbooks to increase verbal diversity and stylistic variation, as well as the identification of errors. The converse GPT system's proficiency in comprehending human language facilitates creative writing, including poems, short stories, novels, and other forms of writing that can match mortal quality (Shidiq, 2023). ChatGPT is a multifunctional writing coadjutor and self- regulated literacy tool that offers prompt feedback on written assignments. It has surfaced as a helpful tool in educational settings, especially for novice English as a Second Language (ESL) learners, by producing text that nearly resembles human language depending on user input (Yan, 2023). While ChatGPT can ameliorate literacy by delivering customized feedback and easing self-directed literacy such as spelling correction, vocabulary improvement, and flexibility in styles of writing, there are also concerns about plagiarism, overreliance on the tool, and the possibility of harming critical thinking chops (Gao et al., 2023). Also, written communication presents ESL learners with further difficulties concerning clarity, inflexibility, and grammatical correctness (Taye & Mengesha, 2024). Given these difficulties, it is essential to probe how artificial intelligence technologies such as ChatGPT can grease the acquisition of these capacities. Although several analyses have delved into the broad consumption of artificial intelligence (AI) in the

educational system, there still needs to be more research on its intense influence on writing capacities within the realm of English as a Foreign Language (EFL) instruction.

The exploration investigates students' opinions about using ChatGPT as a tool for writing both academic writing and completing academic essays during their academic time. More interestingly, according to MoEYS (2025), during the periodic Education Congress, a concern was raised regarding the integration of educational technology into the advanced education system with the rise of Artificial Intelligence (AI). On the other hand, each undergraduate scholars feel to find more complicated to engage them in technology consumption despite their familiarity with the present ultramodern technology. In addition, numerous schools, colleges, and universities incorporate technology into their literacy surroundings (Van et al., 2012). On the other hand, according to leading OpenAI investors, CNBC (2023) reported that OpenAI has the potential to be one of the most consequential companies in the history of computing.

This study aims to probe the core elements of ChatGPT's role in promoting the quality of advanced education among beginners, sophomores, juniors, elderly. Meanwhile, it helps to explore the procedures of how important scholars find out and comprehend the technology consumption and also to encounter the challenges during the execution of ChatGPT in the classroom and academy course. Especially, the significance of this study lies in its eventuality to contribute to the field of English as a Foreign Language (EFL) education, particularly in the environment of Cambodia, where English proficiency is decreasingly important for academic, professional, and global communication. Obviously, learners can ask ChatGPT to correct and prepare the grammar and sentence structure to be more systematized. Counting on it can cut down some anxiety and stress on the complicated points in learning a language.

The world in this technological artificial revolution is taking step briskly from one side to another side without pausing which requires people to complete their tasks precisely. Within the last four times, since 2020 amidst the epidemic the entire world was under the lockdown by staying, studying and working from home. ChatGPT is an Artificial Intelligence operation of OpenAI company that is produced grounded on Chatbot technology and applied textbook generation tools, similar as ChatGPT and GPT-3 (Fitria, 2023). According to Dharani et al. (2020), the authors state that Chatbot is an intelligent system that uses the natural language process (NLP) to carry out exchanges by textbook or voice. By comparing the input conditions of the user to the chatbot database, if both of them match, the Chatbot will return the proper affair to the user. There are five main advantages of ChatGPT, including learning assessment, pedagogical practice, virtual personal tutoring, essay or research article outline, and idea brainstorming (Sok & Heng, 2023). Huang and Tan (2023) stated that ChatGPT serves as an machine for perfecting different areas of scientific writing, similar as accelerating the writing process, creating thorough outlines, adding significant information, and polishing writing styles to satisfy the conditions of important scientific communication.

According to Huddleston and Pullum (2002), a language's grammar alphabet describes the principles or rules governing the form and meaning of words, expressions, clauses, and rulings. It's indeed import to express the complete study from the speakers to the listeners to avoid miscommunication in spoken or written language. Grounded on Patel (2023) said that ChatGPT has the implicit to enhance the grammatical perfection and syntactical intricacy of scholarly compositions. The process entails the identification and rectification of mistakes while furnishing pens with formative feedback aimed at perfecting the overall quality of their work. Whereas ChatGPT provides written feedback to overcome time constraints, traditional feedback, cognitive workload, and inconsistency (Zhang, 2024). Also, ChatGPT serves as a result for language expansion, allowing scholars to enhance their vocabulary and overall language proficiency (Koraishi, 2023). According to Božić and Poola (2023) ChatGPT has positive goods on learners at academy. It can give real- time feedback to ameliorate learners' grammar.

ChatGPT is not only beneficial in grammar and mistakes checking, but also crucial in information retrieval and prompt-based information seeking. Ekin (2026) found that well prompt with ChatGPT can significantly enhance reliability, quality and several effective retrievals comprising clarity and specificity, explicit constrains, and domain specificity. In addition, Adjei et al. (2025) discovered that ChatGPT web search or prompt synthesized information into coherent, structured insights but needed to validate with Google web search to verify facts. However, Kumar et al. (2025) stated that students preferred using traditional method with google search to gather information for difficult concepts and using ChatGPT for conversational, explainable, and specific information.

Vocabulary Literacy is a delicate task for utmost EFL learners due to a lack of exposure to the target language input, especially in the non-English speaking terrain environment, as well as ineffective strategies such as memorization, which give only shallow processing and lack contextual enrichment (Laufer & Hulstijn, 2001). Scholars are more concerned with using words for their knowledge, and memorization of new words are at pain points. To address these challenges, new ways of exposing learners to vocabulary, such as interactive and contextual conditioning in both spoken and written forms, are demanded to promote lesser retention and vocabulary operation (Nation, 2022). Once it has stepped into this AI revolution, scholars are more confident in varying words similar to synonyms or opposition words without doubling or making teachers or readers lose interest in viewing or grading their work.

Hongxia and Razali (2025) revealed that ChatGPT strengthens the writing ability of students regarding content, structure, coherence, grammar, language range, spelling, and forms. Research has shown that AI- powered writing sidekicks can help overcome writer's block and enhance creativity. Zhai (2022) used ChatGPT to generate ideas and wrote an entire paper, entitled 'ChatGPT User Experience Implication Counteraccusations for Education'. Therefore, there's no mistrustfulness that this recently developed AI- generated tool has a significant capacity to help experimenters communicate ideas for exploration papers, although it's vital that experimenters should acclimate and corroborate the ideas

generated by ChatGPT to avoid miscalculations or misleading information (Gordijn & Have, 2023).

EFL learners who acquire or consider English as their foreign language tend to encounter some obstacles in rephrasing since it serves as the foundational skill for academic writing. Still, learning to translate can be a delicate task, particularly for non-native English speakers due to its demand to convey information in their own words while retaining the original meaning (Chen et al., 2015). Keck (2014) stated that paraphrasing is an "incredibly complex skill that requires a high level of grammatical and verbal knowledge. Whereas Walsh Marr (2019) emphasizes the significance of conveying the author's meaning and point of view without relying on analogous words or judgment structures from the source. Some learners aren't good enough at rephrasing, for some universities don't fit this subject into their main class, or they aren't suitable to catch up the core rudiments to conduct a good paraphrasing.

As ChatGPT offers immediate feedback and recommendations, consumers might come exorbitantly reliant on it, depending entirely on the system for corrections rather than sharing laboriously in their own literacy. Despite its benefits, using ChatGPT to ameliorate writing among EFL scholars poses several challenges, including overreliance on the system (Baskara, 2023). As ChatGPT provides instant feedback and suggestions, users may come exorbitantly dependent on it, counting solely on the tool for corrections rather than engaging in their own literacy process. This dependence could hamper the development of independent writing chops and critical thinking. ChatGPT's responses are grounded on the information it has been trained on, a subset of current resources (Pavlik, 2023). In addition, ChatGPT enhances cognitive performance, and critical thinking skills (Dimeli & Kostas, 2025). Plagiarism is the act of exercising another person's work or ideas without furnishing the necessary credit. The involvement of AI algorithms can produce challenges in relating original content versus espoused material, thereby obscuring the distinction between genuine originality and plagiarism. For those above reasons, ChatGPT should be used as a probative tool alongside human writing instruction and feedback to insure a well- rounded approach (Lund & Wang, 2023).

Miltenoff (2024) stated that academic librarian played significant role as AI literacy leaders in training students the AI literacy related to copyright, data privacy, and ethical considerations. In addition, Filson and Atuase (2024) found that academic librarian focused on maintaining research integrity by training students how to cite, search, and evaluate information.

Although several analyses have studied the huge application of AI in worldwide educational platforms, there remains a limit of empirical evidence defining roles of ChatGPT in Cambodian EFL context regarding writing accuracy improvement. MoEYS (2025) stated in Education Congress that educational technology integration in Cambodian higher education faces exclusive systemic and infrastructural challenges. While there are numerous literatures highlighted plenty of significant benefits of AI in language learning assistance.

RQ1: What are the effective roles of ChatGPT in improving the writing accuracy of undergraduate EFL learners at the National University of Battambang?
RQ2: What challenges do students encounter when using ChatGPT to enhance their writing skill?
RQ3: Is there significant difference between male and female undergraduate students in their eudcational comprehension and perceptions toward using ChatGPT in English writing skill

2. METHOD

2.1 Research Design

This research design has been decided to apply quantitative method with descriptive statistics. The main purpose of the author is to explore the roles of ChatGPT in enhancing writing accuracy among undergraduate students in National University of Battambang. With descriptive research method, the author is more confident in seeking for the amounts of male and female students doing their profession in English major using or relying on ChatGPT as their assistance. Furthermore, applying the quantitative research with descriptive analysis provides and displays authors about the measuring frequency of ChatGPT perceptions in helping their writing study and improvement as well. The researcher come to discoveries of some important points of descriptive research since it helps summarizing data which includes mean, median, standard deviation to allow authors figure out the datasets into meaningful summaries. Last but not least, this method has got a significant role in organizing information to be in order and well-organized so that the readers can easily understand the research findings which have been done so far.

First, the author is working carefully in seeking for some tasks in which ChatGPT can function in academic fields of study in each level of students. Since 2020, an American company known as OpenAI has invested and developled their technological program to get deep into the world competitive market. Second, the author has set an objectives to investigate the challenges and limitations which students face during using ChatGPT for writing improvement. In this point, learners have got prior knowledge related to ChatGPT and obtain extra instruction from their lecturers or friends toward using ChatGPT correctly with correct terms in questions for them. Last but not least, the final objective of this research is to identify whether there are differences between male and female among undergraduate students in their education and perceptions toward using ChatGPT. In this stage, author is supposed to survey the male and female groups of their experiences related to ChatGPT consumptions and to identify in which group among EFL learners (English as as a Foreign language) is more likely to feel comfortable and reliable on ChatGPT as their assistance.

2.2 Population and Participants

Based on Rahman (2023) stated that a sample size of 100 to 200 is sufficient for a straightforward research model with normally distributed data. However, according to Kline (2005), a sample size of 100 respondents is considered small, 200 respondents is considered

medium, and any number above 200 is considered large. This research decided to select NUBB, which is known as a famous public educational institution in northwestern Cambodia, to collect data from 288 students among year I to year IV majoring in English literature. Mainly, the Institute of Foreign Language (IFL) consists of 355 students who are doing their English literature from year 1 to year 4.

3.3 Sample size and Sampling Procedures

Purposive sample allows for the selection of information-rich cases that offer deep insights into the phenomenon under investigation. Purposive sampling is a kind of non-probability sampling which allows and facilitates researcher to choose sampling based on the available participants. Regarding this, the researcher has decided to choose 226 undergraduate students who have been studying English from year I to IV at the National University of Battambang (NUBB) to take part in the study on a topic relevant to the roles of ChatGPT for writing accuracy enhancement. With appropriate research location, population, and sample size, the researcher is more willing and confident to ensure that the data collected is specified to whom it may concern.

3.4 Research Tools and Instruments

The researcher adapted a survey questionnaire from Sultan et al. (2025) as a research instrument. A quantitative method was employed with 371 undergraduate English students. The participants were between 18 and 33 years old. The questionnaire was separated into 4 parts. The first section includes demographic information about the participants is the first section, including general questions about gender, age, major, and occupation; the second section is about the use and familiarity with ChatGPT; the third section is about the impact of ChatGPT on writing abilities; and the fourth section is about perceptions and challenges in using ChatGPT. Starting from the second section till the fourth section, the researcher conducted a frequency and familiarity scale of 5 points Likert scale format, which consists of Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), and Strongly Agree (SA).

3.5 Data Collection Procedures

This study is supposed to collect data from individual participant who are doing their major in English literature. Firstly, the researcher was allowed by the office of administration with a permission letter to go through the available classes to distribute questionnaire forms conducted via Google Form to students during their class time as well as drop into their group chats. Each student was delivered a consent form to ask for their permission to fill in the information. They were informed and instructed to go through all sections in the form and asked to check each item carefully so that the data given was reliable and accurate. They were given about 15 minutes to finish all parts orgranized on questionaire section before clicking on the submission button.

After finishing the primary data obtained from the target participants, the researcher had to work harder and stronger to look for more relevant documents and research articles online

or other books or short courses in the seminar and training programs. These sources are significant to complete the missing parts of the research and are considered extraordinary resources to encourage more understanding of the study being conducted.

3.6 Data Analysis

This study aims to explore the roles of ChatGPT in enhancing writing accuracy among undergraduate EFL learners at the National University of Battambang, Cambodia (NUBB). The process of analyzing data was done through descriptive statistics, sample t-test, and One-Way ANOVA. Additionally, the researcher used descriptive statistics to discover the fundamental points of the data gathered to view a clear overall summary of the sample. The use of a sample t-test examined the difference in consumption of ChatGPT in reinforcing their writing ability between genders of males and females. However, one-way ANOVA is to determine if there are statistically significant differences between the means of three or more independent groups and only tells you that a significant difference exists somewhere among the groups. The data the researcher gathered from the undergraduate students at NUBB via a Google Form sent to each group chat of students was analyzed and verified using SPSS version 25.0. The researcher also included the correlation analysis to assess and certify the relationships between variables, and both descriptive and inferential statistics were employed to summarize and test the data.

3. RESULTS AND DISCUSSION

4.1 Results

Table 1: Demographic Profile

Characteristics		Frequency	Percentage
Gender	Male	50	22.1
	Female	176	77.9
Age	Below 18	6	2.7
	18-23	197	87.2
	23-28	20	8.8
	28 above	3	1.3
Academic Year	Freshman	55	24.3
	Sophomore	77	34.1
	Junior	47	20.8
	Senior	47	20.8

Table 1 indicates the number of students in each academic year. It consists of three categories such as Gender, Age and Academic Year. Likewise, there were 226 students to participate in the data collection which included 50 male students in equal to 22.1% and the remaining percentage was 77.9 % in equal to 176 female students. Regarding to age group of students started from 18 to 23 consisted of 197, 23 to 28 consisted of 20 and 28 above was only 3 students. Significantly, there had been selected four academic years including 55 students of Freshman, 77 students of Sophomore, 47 students of Junior, and 47 students of Senior.

Table 2: Roles of ChatGPT

Items	Statements	Level of Agreement %					M	SD
		SD	D	N	A	SA		
RoC1	ChatGPT helps me identify and correct grammatical errors in my writing.	2.7	7.5	20.8	46.9	22.1	3.78	.962
RoC2	Using ChatGPT has improved my ability to write with proper punctuation and sentence structure.	3.1	4.9	27.0	54.0	11.1	3.65	.857
RoC3	ChatGPT enhances my awareness of spelling and typographical mistakes.	3.5	6.2	37.2	41.6	11.5	3.51	.905
RoC4	ChatGPT offers helpful suggestions to improve the clarity and correctness of my sentences.	1.8	6.2	23.9	54.9	13.3	3.72	.838
RoC5	ChatGPT reduces the number of language errors in my final drafts.	3.1	10.2	30.5	43.4	12.8	3.53	.948
RoC6	I rely on ChatGPT to ensure my writing adheres to standard grammar rules.	3.1	10.6	35.4	42.0	8.8	3.43	.908
RoC7	ChatGPT helps me maintain consistency in tense, voice, and subject-verb agreement.	1.3	7.1	34.1	45.6	11.9	3.60	.839
RoC8	ChatGPT provides accurate corrections without significantly changing the meaning of my content.	3.1	9.3	35.4	44.2	8.0	3.45	.884
RoC9	ChatGPT serves as a reliable proofreading tool for academic or professional writing.	3.1	6.2	38.9	41.6	10.2	3.50	.876
RoC10	Using ChatGPT has increased my confidence in producing grammatically correct writing.	2.2	8.0	32.3	45.6	11.9	3.57	.883
RoC11	ChatGPT helps me detect awkward or unclear sentence constructions.	2.2	8.0	29.6	48.2	11.9	3.60	.880
RoC12	ChatGPT improves the syntactical flow of my writing.	2.2	6.2	37.2	46.5	8.0	3.52	.818
RoC13	I use ChatGPT to check for run-on sentences and sentence fragments.	3.5	8.4	27.9	49.6	10.6	3.55	.919
RoC14	ChatGPT's feedback helps me avoid repetitive or redundant phrasing.	2.2	7.1	31.9	49.6	9.3	3.57	.842
RoC15	ChatGPT enhances my understanding of common grammatical mistakes.	2.7	5.3	29.2	51.8	11.1	3.63	.850
RoC16	ChatGPT's corrections help me learn the proper use of prepositions and articles.	2.2	4.9	35.4	49.6	8.0	3.56	.799
RoC17	ChatGPT assists me in rephrasing poorly worded sentences.	1.8	6.6	32.3	49.1	10.2	3.59	.829
RoC18	I find ChatGPT's grammar suggestions to be more helpful than traditional grammar checkers.	1.8	10.2	31.4	47.3	9.3	3.52	.865
RoC19	ChatGPT improves my ability to write formally and appropriately for different contexts.	2.7	7.1	26.1	54.0	10.2	3.62	.862
RoC20	Using ChatGPT has helped me internalize better grammar and writing practices over time.	1.8	8.8	28.3	52.7	8.4	3.57	.862
RoC21	ChatGPT helps me avoid subject-verb disagreement in complex sentences.	2.2	7.1	25.7	54.9	10.2	3.64	.844
RoC22	ChatGPT provides explanations that help me understand my writing mistakes.	2.7	5.8	23.0	51.3	17.3	3.75	.901
RoC23	I use ChatGPT to double-check verb tense consistency in my writing.	3.1	11.5	22.6	51.3	11.5	3.57	.946
RoC24	ChatGPT helps maintain logical coherence in paragraph construction.	1.8	8.8	36.7	42.0	10.6	3.51	.865
RoC25	ChatGPT helps reduce ambiguity and vagueness in my writing.	1.3	10.6	36.7	42.5	8.8	3.47	.849
RoC26	ChatGPT is useful for cross-checking grammatical accuracy in non-native English writing.	3.5	6.6	33.6	45.6	10.6	3.53	.900
RoC27	Using ChatGPT has minimized the number of revisions I need to make for grammar.	2.7	8.4	37.6	43.8	7.5	3.45	.854
RoC28	ChatGPT improves the accuracy of my writing when translating thoughts into English.	1.8	8.4	32.3	47.3	10.2	3.56	.853
RoC29	ChatGPT helps me recognize patterns in the errors I tend to make.	2.2	9.7	34.1	44.7	9.3	3.49	.876
RoC30	I use ChatGPT to compare alternative phrasings and select the most grammatically correct option.	1.3	6.6	34.1	47.3	10.6	3.59	.818

Table 2 shows about the roles of ChatGPT in enhancing the writing accuracy among undergraduate students. The data consisted of mean score ranged from 3.43 to 3.78 on 5 Likert-Scale. With results shown in the table which the highest mean score is 3.78 with

46.9% of students agree along the statement "ChatGPT helps me identify and correct grammatical errors in my writing" (RoC1), emphasized on the views that students are more comfortable and reliable to consume ChatGPT to improve their grammar structure and corrections. Meanwhile, a mean score of 3.72 matched with 54.9% indicated the agreement of students with statement "ChatGPT offers helpful suggestions to improve the clarity and correctness of my sentences" (RoC4) showed that many students believe in clarity and correctness of ChatGPT gives them to improve the sentences. A mean score of 3.64 with 54.9 % displayed those participants agree with statement "ChatGPT helps me avoid subject-verb disagreement in complex sentences" (RoC21) meant that majority of students feel more reliable on ChatGPT to keep them away from avoiding subject-verb disagreement in complex sentences. The statement "ChatGPT's corrections help me learn the proper use of prepositions and articles." (RoC16) contains mean score of 3.56 with 49.6% of agreement, revealing the accuracy of learning with usage of prepositions and articles. The mean score of 3.47 with 42.5% of agreement of students with the statement **"**ChatGPT helps reduce ambiguity and vagueness in my writing.**"** (RoC25), revealing the satisfaction of students toward the ability of ChatGPT to progress ambiguity and vagueness in their writing. Moreover, the lowest mean score is 3.43 contained 42.0% of students agree with the statement "I rely on ChatGPT to ensure my writing adheres to standard grammar rules" (RoC6) expressed that plenty of students agree with ChatGPT to ensure their writing to standard grammar rules.

Table 3: Perceptions of ChatGPT Usage

Items	Statement	Level of Agreement %					M	SD
		SD	D	N	A	SA		
PCU1	It has come to ChatGPT once recalling AI tools.	2.2	7.1	36.3	37.2	17.3	3.60	.929
PCU2	ChatGPT has got plenty functions for EFL learners to improve their learning ability.	2.2	7.1	36.3	37.2	17.3	3.65	.842
PCU3	I am willing to use ChatGPT to complete my demands.	1.3	11.5	37.6	37.6	11.9	3.47	.895
PCU4	Once it comes to curious questions, I always remember ChatGPT to search for my questions.	1.3	9.7	29.2	44.7	15.0	3.62	.902
PCU5	I consider ChatGPT as one of my best friends.	3.5	11.5	31.0	36.3	17.7	3.53	1.025
PCU6	Having ChatGPT in hand resembles holding world information.	1.8	9.7	29.6	44.2	14.6	3.60	.914
PCU7	I can search and explore information worldwide faster on various topics.	2.2	6.6	27.0	48.7	15.5	3.69	.891
PCU8	I am confident in relying on information provided by ChatGPT.	1.8	15.0	38.5	36.3	8.4	3.35	.897

Table 3 showed the results of perceptions among undergraduate students toward ChatGPT Usage for their writing improvement. The mean score ranges from 3.35 to 3.69 on 5 Likert-Scale. The highest mean score is 3.69 with 48.7% students agree with the statement "I can search and explore information worldwide faster on various topics" (PCU7) indicated that many students feel comfortable with ChatGPT to search and explore information worldwide faster on various topics. The mean score 3.65 contains 37.2% indicated that most students agree with the statement "ChatGPT has got plenty functions for EFL learners to improve their learning ability" (PCU2) meant that EFL participants have thought of multiple functions of ChatGPT to improve their learning ability. Moreover, 3.37 of mean score with

37.6% represented the agreement of students with statement "I am willing to use ChatGPT to complete my demands" (PCU3) certified that students feel comfortable in using ChatGPT to get their demands done completely. Last but least, with mean score 3.35 consisting of 36.3% to stress on the agreement of students on statement "I am confident in relying on information provided by ChatGPT." (PCU8) expressed that some students lack of confidence in relying on information provided by ChatGPT.

Table 4: Challenges of Using ChatGPT

Items	Statements	Level of Agreement %					M	SD
		SD	D	N	A	SA		
CUC1	I find it challenging to fully utilize ChatGPT's capabilities.	1.8	11.1	40.7	30.1	16.4	3.48	.953
CUC2	The responses from ChatGPT are sometimes too complex or technical for my needs.	1.3	5.3	27.4	53.1	12.8	3.72	.770
CUC3	I often experience issues with ChatGPT misunderstanding my prompts.	0.9	6.6	35.0	42.0	15.5	3.65	.853
CUC4	ChatGPT sometimes gives incomplete or cut-off answers.	0.4	7.1	31.9	49.6	11.1	3.64	.790
CUC5	I find it challenging to get accurate information from ChatGPT without repeated prompting.	1.3	7.1	43.8	37.6	10.2	3.48	.823
CUC6	I find it challenging to fully utilize ChatGPT's capabilities.	1.8	8.8	34.5	47.3	7.5	3.50	.829
CUC7	The responses from ChatGPT are sometimes too complex or technical for my needs.	0.9	8.8	34.5	46.5	9.3	3.54	.817
CUC8	I often experience issues with ChatGPT misunderstanding my prompts.	1.3	7.1	32.3	47.3	11.9	3.62	.837
CUC9	I am concerned about the accuracy of information provided by ChatGPT.	1.3	8.0	36.3	44.2	10.2	3.54	.833
CUC10	ChatGPT occasionally gives outdated information that affects my work.	0.9	8.4	42.0	38.5	10.2	3.49	.823
CUC11	I struggle to verify facts presented by ChatGPT.	0.4	8.4	37.2	44.2	9.7	3.54	.800
CUC12	I find it hard to determine when ChatGPT is confident or uncertain about an answer.	0.4	7.1	34.1	43.8	14.6	3.65	.831
CUC13	I worry that ChatGPT sometimes presents opinions as facts.	0.9	8.8	45.6	39.4	5.3	3.39	.760
CUC14	I am concerned about the accuracy of information provided by ChatGPT.	1.3	8.0	38.9	42.5	9.3	3.50	.823
CUC15	ChatGPT occasionally gives outdated information that affects my work.	2.2	6.2	29.2	45.1	17.3	3.69	.905
CUC16	ChatGPT discourages critical thinking by providing ready-made answers.	0.4	8.4	33.6	45.6	11.9	3.60	.822
CUC17	I worry that regular use of ChatGPT may weaken my own problem-solving skills.	0.4	6.2	39.4	42.9	11.1	3.58	.786
CUC18	ChatGPT sometimes oversimplifies complex topics, which limits deep understanding.	0.4	8.8	38.5	45.1	7.1	3.50	.773
CUC19	It is challenging to use ChatGPT as a learning tool without prior subject knowledge.	1.3	6.2	34.5	48.2	9.7	3.59	.802
CUC20	ChatGPT occasionally reinforces misinformation or biases without clarification.	2.2	6.2	40.3	41.2	10.2	3.51	.845
CUC21	I am concerned about how my data is used or stored when I use ChatGPT.	2.2	7.5	34.1	46.9	9.3	3.54	.849
CUC22	Using ChatGPT raises ethical concerns in academic or professional work.	0.9	7.5	33.6	44.7	13.3	3.62	.863
CUC23	I avoid using ChatGPT for sensitive or personal tasks due to privacy concerns.	0.9	8.0	34.5	42.0	14.6	3.62	.863
CUC24	I find it difficult to cite or give credit when I use information from ChatGPT.	0.4	6.2	27.9	50.0	15.5	3.74	.810
CUC25	I worry that students or professionals may use ChatGPT unethically (e.g., for plagiarism).	1.3	4.9	42.5	42.5	8.8	3.53	.778
CUC26	ChatGPT sometimes fails to understand local context or cultural nuances.	0.9	7.5	38.1	46.9	6.6	3.51	.767
CUC27	The tool occasionally provides responses that seem biased or culturally insensitive.	1.3	8.8	39.8	43.4	6.6	3.45	.800

CUC28	ChatGPT struggles to generate responses in languages other than English with the same quality.	1.8	4.9	33.6	48.2	11.5	3.63	.819

Table 4 showed the results of challenges of using ChatGPT among EFL undergraduate students toward writing accuracy. In this table, the mean score ranged from 3.74 to 3.39 on a 5-Likert-Scale. Meanwhile, the highest mean score is 3.74 represented 50.0% of respondents agree with statement "I find it difficult to cite or give credit when I use information from ChatGPT." (CUC24) concentrated that many students feel that they have difficulties to cite or give credit when they use information from ChatGPT. The mean score of 3.72 of 53.1% presented the agreement of participants to the statement "The responses from ChatGPT are sometimes too complex or technical for my needs." (CUC2) showed that the ChatGPT provides some complex and technical things to the needs for students. Whereas 45.1% of 3.69 mean score showed that participants acknowledge the statement "ChatGPT occasionally gives outdated information that affects my work." (CUC15) indicated plenty of students raise concerns with outdated information provided by ChatGPT that affects their work. Also 3.64 of mean score with 49.6% displayed the statement "ChatGPT sometimes gives incomplete or cut-off answers." (CUC4) that students think ChatGPT gives them incomplete or cut-off answers. The statement "ChatGPT sometimes oversimplifies complex topics, which limits deep understanding." (CUC18) contains a mean of 3.50 with 45.1%, highlighting with the level of critical and deep knowledge for students with various topics. The mean score of 3.48 with 37.6% of agreement with the statement "I find it challenging to get accurate information from ChatGPT without repeated prompting." (CUC5), indicating the challenges for accurate information from ChatGPT for students. The statement of (CUC13) "I worry that ChatGPT sometimes presents opinions as facts." contained 45.6% of neutrality with 3.39 of mean score expressed students remain neutral with ChatGPT sometimes presents opinions as facts.

Table 5: Independent sample t-test between genders

Variables	Gender	Mean	SD	t	Sig
Roles of ChatGPT	Male	3.72	.776	1.968	.050
	Female	3.52	.586	1.687	
Perceptions of ChatGPT Usage	Male	3.72	.830	1.855	.065
	Female	3.52	.610	1.567	
Challenges of Using ChatGPT	Male	3.75	.553	2.882	.004
	Female	3.51	.485	2.679	
p-value<0.05= statistically significant; p-value≥ 0.05 not statistically significant					

Table 5 shows results from the independent samples t-test reveal nuanced gender differences in undergraduate students' understanding and perceptions regarding the use of ChatGPT for English writing skills. Male students showed marginally higher average scores than female students on all three measures: Rate of Comprehension (RoC), Perceived Comprehension Usefulness (PCU), and Comprehension Use Confidence (CUC). For RoC, males (M = 3.72) scored slightly above females (M = 3.52), with the difference nearing statistical significance under the assumption of equal variances (t(224) = 1.97, p = .050), indicating only a minimal gender effect. In terms of PCU, males (M = 3.72) again outperformed females (M = 3.52),

but the difference was not statistically significant (t(224) = 1.86, p = .065), suggesting that both genders perceive similar levels of usefulness. Notably, for CUC, the difference was statistically significant, with males (M = 3.75) displaying higher confidence compared to females (M = 3.51), t(224) = 2.88, p = .004. Overall, these results indicate that while both genders share similar levels of comprehension and perceived usefulness when using ChatGPT in English writing, male students report significantly greater confidence in their comprehension, highlighting a possible gender-based difference in self-assessed confidence rather than actual performance.

Table 6: One-Way ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Roles of ChatGPT	Between Groups	1.357	3	.452	1.117	.343
	Within Groups	89.865	222	.405		
	Total	91.222	225			
Perceptions of ChatGPT Usage	Between Groups	1.818	3	.606	1.364	.255
	Within Groups	98.658	222	.444		
	Total	100.476	225			
Challenges of Using ChatGPT	Between Groups	.302	3	.101	3.86	.763
	Within Groups	57.947	222	.261		
	Total	58.249	225			

Table 6 reveals the results of One-Way ANOVA was performed to assess differences and to compare mean of Roles of ChatGPT, Perceptions of ChatGPT Usage, and Challenges of Using ChatGPT among freshman, sophomore, junior, senior students. The analysis found no statistically significant differences across the groups for any of the variables. For roles of ChatGPT (RoC), the results were F(3, 222) = 1.117, p = .343, indicating no significant variation between groups compared to within groups. Similarly, the perceptions of ChatGPT Usage (PCU) analysis showed F(3, 222) = 1.364, p = .255, which was not statistically significant. For challenges of using ChatGPT (CUC), the ANOVA produced F(3, 222) = 0.386, p = .763, again confirming no significant group differences. Overall, these results indicate that group membership did not meaningfully influence any of the three measured variables.

3.2 Discussion

The results of this study offer detailed insights into the functions of ChatGPT in improving writing accuracy among undergraduate English as a Foreign Language (EFL) learners. These findings correspond with the research objectives and present a comprehensive analysis of students' perceptions, encountered challenges, and the influence of ChatGPT on their writing proficiency.

Descriptive analysis of the 'Roles of ChatGPT' section (Table 2) indicates that students perceive ChatGPT as an effective resource for enhancing writing accuracy. High mean scores for identifying and correcting grammatical errors (M=3.78), improving sentence clarity and correctness (M=3.72), and avoiding subject-verb disagreement (M=3.64) demonstrate that students depend on ChatGPT for essential language mechanics, aligning with current studies (Patel, 2023; Zhang, 2024). This outcome addresses the study's first

research question and confirms that ChatGPT significantly assists learners with specific writing components, including grammar, punctuation, and sentence structure. The findings further show that ChatGPT functions as a reliable proofreading and editing tool, which is especially advantageous for non-native English speakers.

The 'Perceptions of ChatGPT Usage' section (Table 3) demonstrates that students generally regard ChatGPT as a valuable tool. The highest mean score was associated with the statement, 'I can search and explore information worldwide faster on various topics' (M=3.69), which aligns with the research findings (Sok & Heng, 2023; Huang & Tan, 2023), reflecting the perceived efficiency of ChatGPT in information retrieval. These results indicate that students consider ChatGPT both a writing assistant and a resource for broader academic inquiry. However, the lowest mean score was recorded for the statement, 'I am confident in relying on information provided by ChatGPT' (M=3.35). This outcome identifies a significant challenge: students utilize ChatGPT for information access but remain cautious about its reliability, underscoring the importance of developing critical evaluation skills. These results aligned with (Adjei et al., 2025; Ekin, 2026; Kumar et al., 2025)

Analysis of the challenges section (Table 4) identified primary concerns, including difficulty with citation and credit (M=3.74) and overly complex or technical responses (M=3.72), aligning with current research study (Baskara, 2023; Pavlik, 2023; Lund & Wang, 2023), indicating that students face some concerns as well as barriers in using ChatGPT in citing or giving credit to the information provided or some information are outdated. These findings address the second research question and confirm that students encounter substantial obstacles. Additional concerns included outdated information (M=3.69) and incomplete or truncated answers (M=3.64). These limitations may impede the learning process and diminish the quality of academic work. These results match with Ciampa et al. (2023) mentioned that ChatGPT provided several inherent risks regarding misinformation and bias, and overdependence. However, Anggraini et al. (2025) found some core themes to overcome above challenges by negotiating dependency, defining ethical boundaries, recognizing conditional trust.

The independent samples t-test (Table 5) showed that while both genders perceive similar levels of usefulness and comprehension, male students report significantly greater confidence in their comprehension (p=.004). This finding addresses the third research question, indicating a gender-based difference in self-assessed confidence rather than actual performance. The One-Way ANOVA (Table 6) found no statistically significant differences in the perception or use of ChatGPT among students from different academic years (p>.05 for all variables). This suggests that the experience and perceived usefulness of ChatGPT is consistent across the student body, regardless of whether a student is a freshman or a senior. These results indicate that, although the t-test identified a gender-based difference in confidence, the ANOVA did not confirm significant differences across groups. Overall, male and female students demonstrate similar comprehension and perceived usefulness in applying ChatGPT to English writing, with the primary distinction being higher self-reported

confidence among male students. This difference likely reflects variations in self-perception rather than substantive differences in comprehension or perceived utility.

4. CONCLUSION

In conclusion, this study demonstrates that ChatGPT significantly enhances the writing accuracy of undergraduate English as a Foreign Language learners (EFL). The results indicate that ChatGPT primarily serves as a tool for grammar and structural correction, reinforcing its value in supporting the foundational aspects of English composition. However, reliance on this technology presents notable challenges, including concerns about information accuracy, the complexity of generated responses, and issues related to academic attribution. These challenges highlight the need for careful and informed integration of artificial intelligence into educational practices. Additionally, the study identified a gender-based difference in self-reported confidence, with male students reporting higher confidence than female students. This observation suggests the need for further research into the psychosocial factors affecting confidence among these groups. The lack of significant differences across academic cohorts indicates that experiences and challenges with ChatGPT are consistent among undergraduates at the institution. This research contributes empirical evidence from a specific regional context, illustrating the complex relationship between emerging technologies and the development of academic writing and critical thinking skills among EFL learners. While ChatGPT provides clear benefits for technical writing, its successful and ethical use requires an emphasis on digital literacy and critical evaluation skills. However, limitation of the design heavily relies on self-reported perception data and reflect perceived improvement rather than testing exact accuracy.Future researcher could consider conducting experimental design or mixed method to minimize the gaps of this study. These findings also suggested academic librarian to play roles as AI training agent for students to maser ChatGPT or AI competencies.

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