Perceptions of EFL Students Regarding the Use of Natural Language Processing AI for Improving English Writing Skill

Dewi Munigarim
2011102421010@umkt.ac.id

Khusnul Khatimah
kk645@umkt.ac.id

Universitas Muhammadiyah Kalimantan Timur

ABSTRACT

In the digital age, rapid technological advancements have introduced various Artificial Intelligence (AI), significantly influencing education, particularly in language learning. This study focuses on ChatGPT, a Natural Language Processing model developed by OpenAI, exploring its transformative potential in language generation tasks, including writing. Ethical considerations in AI development, emphasized by organizations like OpenAI, are crucial for responsible deployment. ChatGPT promises to modernize language learning, particularly in English as a Foreign Language (EFL) context, by aiding learners in writing tasks. Writing skills are essential for language proficiency, encompassing cognitive, emotional, and social dimensions. The integration of AI in language learning not only enhances writing proficiency but also fosters creativity and critical thinking. However, student perceptions of AI tools like ChatGPT vary, with concerns about creativity hindrance and reliance on technology. Employing a mixed-methods approach, this study investigates EFL students' perceptions of ChatGPT's impact on writing skills, revealing predominantly positive responses alongside challenges such as internet connectivity issues and reliance on paid versions. Overall, ChatGPT offers opportunities to enhance writing skills, although ethical deployment and user dependency considerations are paramount.
Key words: Artificial Intelligence; Language Learning; ChatGPT

INTRODUCTION

The growth of technology in this digital term has experienced rapid progress, as evidenced by the emergence of various Artificial Intelligences capable of influencing and changing various aspects of human existence, notably in the field of education. Artificial Intelligence (AI) and adaptive learning technologies are received significant interest in the last few years. The 2018 Horizon study highlights artificial intelligence and adaptive learning technology (Ginting et al., 2023). The incorporation of Artificial Intelligence (AI) applied to language learning holds the promise of bringing about significant transformation education significantly for both learners and educators (Aljohani, 2021). One of the technological media

frequently utilized and currently widely discussed in the teaching and learning process is ChatGPT. ChatGPT was created by a research and technology laboratory in the United States of America and was introduced to the public in November 2022 (Setiawan & Luthfiyani, 2023). ChatGPT can generate grammatically correct sentences, assisting learners in creating well-structured texts. As an AI-powered language-learning tool, it can comprehend human queries and deliver optimal responses (Wei, 2023).

ChatGPT is a Natural Language Processing model created by OpenAI, utilizing the Generative Pertained Transformer (GPT-3) architecture, originally designed for tasks related to language generation, including machine translation (Chairunnisa, 2023). These algorithms drive interactions in practice games, assess writing quality, and provide feedback in the Essay Writing Module (McNamara et al., 2013). Simultaneously, Artificial Intelligence (AI) within Natural Language Processing has the capability to extend its scope beyond the analysis, interpretation, and enhancement of how we retrieve information (Chowdhary, 2020). Meanwhile Artificial Intelligence (AI) itself is a technology involving computer systems, software, and even robots designed to mimic human thinking. According to (Zulfa et al., 2023). Artificial Intelligence (AI) is a branch of computer science dedicated to creating intelligent systems with the ability to perform various writing tasks.

As outlined on its official website, OpenAI is dedicated to a mission aimed at ensuring that Artificial Intelligence (AI) is design and deployed in a manner that is beneficial to the broader public, emphasizing the importance of ethical and inclusive considerations in the development and application of Artificial Intelligence technologies. Furthermore, Artificial Intelligence (AI) also has the capability to transform the teaching and learning process into a more modernized approach. Artificial Intelligence is the most realistic tool that can be used by English as a Foreign Language (EFL) learner in the learning process, and by using Artificial Intelligence English as a Foreign Language (EFL), learners can enhance their skills (Shin, 2018).

In English language learning, there are four skills that need to be mastered, and one of them is the skill of writing. Writing is widely recognized as a multidimensional effort that includes cognitive, emotional, and social elements (Ginting et al., 2023). Writing is an activity that involves the process of expressing knowledge and thoughts from the human mind into written form. Writing skills encompass various language aspects, such as the use of appropriate words, the construction of well-formed sentences, and the organization of larger pieces in communication (Purnamasari et al., 2021). Meanwhile, (Pratiwi, 2016) explains that writing is a complex activity involving several skills, including the ability to generate ideas, structure them, determine the concepts to be written, and the determination to convey those words into written form that is clear and effective.

In addition, according to (Pratiwi, 2016) writing qualifies as a productive skill since it emphasizes the creation of information. Therefore, when individuals engage in writing, they evidently have a greater opportunity to contemplate and formulate

their thoughts compared to when they are speaking. This, the learning of writing skills requires not only mastery of basic language aspects but also the ability to creatively develop ideas and organize them in a structured manner to convey a cohesive and meaningful message.

Implementing Artificial Intelligence (AI) and technology helps pupils improve their academic writing skills. According to (Zulfa et al., 2023) digital tools allow students to access a wealth of material and collaborate in the writing process, supporting proper concept expression and the development of writing abilities. As Artificial Intelligence (AI) driven language models gain increasing traction, ChatGPT appear as a promising tool to assist writers throughout the research and writing stages (Mondal & Shaikat, 2017). Moreover, ChatGPT, as an Artificial Intelligence (AI), has an excellent advantage in terms of comprehending information depth and connecting proposition to gain conclusions, compared to humans, who have limitations in their aptitude to recite a comprehensive gap of literature and differentiate the connections among seemingly separate pieces of information (King, 2023).

This study seeks to build upon this scholarly discourse by delving into the dynamic relationship between ChatGPT and the augmentation of writing abilities among English as a Foreign Language (EFL) student. By drawing on the insights of participants and their experiences with this advanced Artificial Intelligence application. Through a comprehensive investigation, this research will examine the multifaceted interactions between ChatGPT and the development of language proficiency. This research intent to understand the effect of ChatGPT on writing abilities and provide valuable insights for teaching practices. Additionally, the study aims to understand the relations between Artificial Intelligence (AI) and language learning in an educational environment, this offering a more detailed perspective on the role of technology in the future of English language education.

LITERATURE REVIEW

Previous Related Study

There are a few reviews of relevant research findings from the previous studies. According (Ngo, 2023) this study aims to explore the perceptions of university students regarding the use of ChatGPT for learning, encompassing its advantages, obstacles, and potential solutions. To gauge student sentiments on employing ChatGPT in their educational endeavours, a questionnaire was administered to 200 students through an online survey, with 30 students participating in semi-structured interviews. The research findings indicated that, overall, students held a positive view of the application of ChatGPT. According to students, the benefits of ChatGPT included timesaving, access to information across diverse domains, personalized tutoring and feedback, and enhanced elucidation of ideas in writing. Additionally, various barriers to using ChatGPT were identified, and several solutions were proposed to enhance its educational utility. The primary concerns

expressed by students while using ChatGPT revolved around the challenges of assessing the quality and reliability of sources, accurately citing sources, and effectively substituting words and employing idioms.

According to (A. A. Imran & Lashari, 2023), the study seeks to investigate the influence of ChatGPT on the writing abilities of undergraduate students. In this qualitative research, 24 students, randomly chosen from two private sector universities in Karachi, were interviewed and analysed. Although the sample size was small, it was diverse, including male and female final-year BS students from both humanities and sciences disciplines. The collected data were categorized into four groups to illustrate varied responses, ranging from positive to negative. The findings indicated a mixed trend, with a majority of students expressing the view that ChatGPT hampers creative writing. However, another segment believed it could be helpful if used under right supervision or controlled situation. These reactions appear rational, given that ChatGPT is still in its early stages, and a comprehensive understanding of its technical aspects may require some time. Nevertheless, further in-depth studies are necessary for its effective implementation across various academic domains.

According to Phan (2023), this study seeks to explore students' perspectives on the application of AI technology in English writing classes. The participants in this research comprised 100 students from four General English classes at Vietnam National University (VNU). To accomplish the research objectives, a combination of quantitative and qualitative research methods, including questionnaires and in-depth interviews, was employed. The study's findings reveal that students generally hold favorable attitudes towards Artificial Intelligence writing tools, emphasizing their accessibility, adaptability, and simplicity.

However, challenges arise in the utilization of these tools, stemming from factors such as learners' technological apprehension and the limited variety of available tools. Additionally, students reported difficulties in navigating complex AI interfaces and a lack of personalized feedback, which can hinder their writing development. Despite these obstacles, many students expressed a willingness to engage with AI tools, recognizing their potential to enhance learning outcomes through instant feedback and diverse language practice opportunities.

This research aims to be a valuable resource for educators seeking to diversify their teaching approaches and encourages students to heighten their interest and motivation in incorporating AI tools into their English learning journey. By addressing the identified challenges and leveraging the positive aspects of AI technology, educators can create more effective and engaging learning environments. The study also suggests further investigation into the development of user-friendly AI tools tailored to the specific needs of English language learners, which could mitigate current limitations and foster a more inclusive and supportive educational experience.

METHOD

Design and Samples

This study at Universitas Muhammadiyah Kalimantan Timur employs a mixed methodology design, utilizing both a questionnaire and semi-structured interviews. The primary objective is to investigate the perceptions of English as a foreign language students regarding the ChatGPT application's impact on their writing skills. Mixed methodology, as described by Lenaini (2021), combines qualitative and quantitative research methods to gather comprehensive, valid, and objective data. The researchers employ random sampling to select participants who can effectively represent the target population, applying three criteria: enrollment in the English Department at Universitas Muhammadiyah Kalimantan Timur, prior use of the ChatGPT application, and completion of an English writing course. Although simple random sampling, as noted by Best and Kahn (2016), is not commonly utilized due to its complexity, the researchers believe it aligns with the study's objectives. Ten individuals are chosen as the sample size, considered adequate to represent the entire population. These participants will be interviewed, focusing on their thoughts and experiences with ChatGPT in English writing study.

Instrument and Procedure:

The research utilizes two main instruments for data collection: interviews and questionnaires tailored specifically for this study. The questionnaire includes both closed-ended questions for quantitative analysis and open-ended questions for qualitative insights, focusing on students' perceptions of ChatGPT. Data collection occurred over two months, allowing participants access to both formats. These instruments were strategically designed to capture a comprehensive understanding of participants' views on ChatGPT's impact on writing skills.

Data Analysis:

The researchers employ both quantitative and qualitative analysis methods. Quantitative data from the questionnaires are analyzed using Likert scale measurements, categorized into Strongly Agree, Agree, Disagree, and Strongly Disagree, and presented through descriptive statistics using SPSS. Qualitative analysis is conducted on the interview data. This dual approach aims to provide a comprehensive understanding of the research findings by integrating quantitative metrics with qualitative insights.

RESULT AND DISUSSION

This section aims to elucidate the purpose of the study, which is to investigate the Students' Perception regarding the Utilization of ChatGPT among students enrolled

in the English Education Study Program at Universitas Muhammadiyah Kalimantan Timur. Data collection involved the administration of questionnaires to gather students' responses. The researchers distributed the questionnaires via WhatsApp private and group chats using Google Forms. Upon issuing online questionnaires to determine respondents' familiarity with and utilization of Artificial Intelligence ChatGPT, 137 responses were obtained. The findings from the questionnaire are categorized and presented in the table below:

Table 3.1 Average of Respondents, Answers

No.	Statement	Positive Perception most Dominant		Negative Perception most Dominant	
		3|4	Percentage	1|2	Percentage
1.	I can fix English grammar faster by using ChatGPT than fixing it manually.	117	85,40%	20	14,60%
2.	In my opinion, ChatGPT is useless in writing English written assignments.	42	30,66%	95	69,34%
3.	I do not feel any problems when I use ChatGPT in writing English assignments.	92	67,15%	45	32,85%
4.	I use ChatGPT to help me paraphrasing in my English writing.	108	78,83%	29	21,17%
5.	I am interested in using ChatGPT to improve my writing skill.	110	80,29%	27	19,71%
6.	I always use ChatGPT in my English assignments.	92	67,15%	45	32,85%
7.	I do think that ChatGPT can be one of the media for learning English.	101	73,72%	36	26,28%
8.	I feel that process of using ChatGPT is not easy, fast and simple.	53	38,69%	84	61,31%
9.	The enthusiasm of my friends to recommend ChatGPT influenced me to use ChatGPT in my English assignments.	110	80,29%	27	19,71%
10.	I use ChatGPT to help me understand errors in my writing skill.	114	83,21%	23	16,79%
Average		68,54%		31,46%	

From the data presented in Table 3.1, it is evident that a significant majority of respondents, totalling 68.54%, expressed an agreeable perception. This suggests a prevailing inclination towards alignment with the topic or statement under consideration. Conversely, the remaining 31.46% of respondents held a disagreeable perception, indicating a notable but comparatively smaller faction with reservations or dissenting views. This distribution underscores the diversity of opinions within the respondent pool, with a clear dominance of those inclined towards agreement.

After distributing questionnaires to English language education students in various semesters at Universitas Muhammadiyah Kalimantan Timur, the researchers then conducted interviews related to ChatGPT with ten students from semesters two, four, six and eight. The interviews were conducted via the Zoom application and Voice Notes WhatsApp for several reasons. Some of the characteristics that selected by the researchers are students with the highest and lowest scores. The score is selected based on their GPA (Grade Point Average).

Through interviews with ten students, researchers garnered insights into their perspectives on using the ChatGPT application, covering their familiarity with it, perceived benefits, and encountered obstacles. All participants were asked identical questions. The initial inquiry focused on their acquaintance with ChatGPT, probing how and where they became aware of it. Among the respondents, six learned about it from peers, three discovered it online, and one came across it via a YouTube advertisement. This distribution illustrates the varied channels through which students become aware of new technological tools. Subsequent questions revolved around their usage of the application and the benefits they perceived. The majority reported utilizing ChatGPT for coursework beyond English writing assignments. Six respondents highlighted benefits such as improved writing, access to journals, and quick access to information, while the remaining four noted its efficiency in assignment completion.

Moreover, some students appreciated the AI's ability to generate ideas and provide comprehensive explanations, which facilitated a deeper understanding of complex topics. This capability was particularly valued in subjects that require critical thinking and creativity. Despite these advantages, a few students mentioned obstacles, including occasional inaccuracies and a lack of human-like reasoning. These drawbacks suggest areas where the technology could be improved to better serve educational needs. Nonetheless, the overall feedback was predominantly positive. The interviews revealed that students view ChatGPT as a valuable educational tool that enhances their learning experience. Its ability to provide immediate assistance and diverse resources makes it a beneficial supplement to traditional study methods. The insights gained from these interviews underscore the growing role of AI applications in education and their potential to support student success.

The fourth question posed by the researchers to the respondents was, "Did you encounter any issues while using the ChatGPT application?" Some respondents reported that they did not face any problems, while others mentioned encountering issues such as network problems and difficulties with the application's usage.

The data gathered from respondents through a questionnaire will be analysed and discussed to address the research question about EFL perceptions regarding the use of the ChatGPT application in their writing. The questionnaire was adapted from Andi's thesis.

According to the questionnaire results, 68.54% of respondents agreed to use the ChatGPT application for their English writing assignments, indicating a positive response to its use in assisting with their tasks. Meanwhile, 31.46% of respondents had a negative perception of using the ChatGPT application for their English writing assignments.

The highest score was statement number one with a percentage of 85.40%. Respondents agree that correcting grammar using the ChatGPT application is faster than correcting it manually. This result is in line with the research conducted by Fang, Tao, et al (2023), stating that the ChatGPT application has excellent error detection capabilities and can freely correct errors to make the corrected sentences very fluent. That means respondents use the ChatGPT application to do their English writing assignments.

Conversely, the lowest score was in question number two with a percentage of 30.66%. Respondents did not agree that ChatGPT was not useful in doing English writing assignments. These results were strengthened by the results of interviews with six respondents who gave almost the same answer that they used the ChatGPT application to do their English writing assignments such as correcting grammatical errors, finding journals that suited their writing and then using them as references and also making their assignments shorter.

In the tenth statement with a percentage of 83.21%, respondents agreed that using the ChatGPT application made them aware of errors in their writing. These results were reinforced by the results of interviews with SSP who said that the ChatGPT application was useful for correcting writing and spelling errors in English writing assignments. This result is in line with the research conducted by Algaraady, J., & Mahyoob, M. (2023), which stated that the ChatGPT application is capable of correcting surface errors in writing.

In statement, 5 and 9 the scores were relatively the same, specifically 80.29% where respondents agreed that they were extracted in using the ChatGPT application to enhance their writing skills because of the enthusiasm of their classmates in recommending the ChatGPT application. This is reinforced by the results of interviews with ARW, BA and RA who initially learned about the ChatGPT application based on suggestions from their classmates. In addition, they used

ChatGPT to improve sentence structure, and then changed words to better use in English writing assignment. In addition, following the data analysis of interview results, it was revealed that the majority of respondents encountered minimal challenges while using the ChatGPT application, with difficulties primarily stemming from occasional interruptions in internet connectivity.

From all the data analyzed, the majority of respondents, 68.54%, agreed with using the ChatGPT application, while 31.46% disagreed. Therefore, it can be concluded that the use of ChatGPT application is generally seen as a helpful tool for correcting grammatical errors in English writing, especially among students majoring in English Education.

Thus, from the discussion results above, it is known that English as a Foreign Language (EFL) students have a positive perception regarding the use of the ChatGPT application to assist them in English writing assignment. However, beyond English writing assignments, the ChatGPT application is also beneficial for completing various course assignments.

CONCLUSION

Based on the findings and discussions above, it was concluded that generally, students have a positive perception towards the use of the ChatGPT application to support their English writing learning. The results show that 68.54% of respondents provided positive responses, while 31.46% provided negative responses. This significant majority indicates a favourable reception of ChatGPT among the student population. Students not only use ChatGPT for English writing assignments but also for completing tasks in other courses, showcasing its versatility and broad applicability in academic work. The research highlights several key advantages of using the ChatGPT application. Students reported that it helps correct grammatical errors, provide suggestions to improve sentence structure, find necessary journals, check spelling, and save time in completing assignments. These benefits contribute to an enhanced learning experience and improved academic performance.

On the other hand, the research also identified some weaknesses associated with using the ChatGPT application. One notable issue is the difficulty students' face with slow internet connections, which can hinder their ability to access and utilize the application efficiently. Additionally, the availability of ChatGPT in a paid version poses a limitation for some students who may not have the financial means to afford it. Despite these challenges, the overall perception remains positive, with many students recognizing the value and utility of ChatGPT in their academic endeavours. The findings underscore the importance of addressing the identified drawbacks to maximize the potential benefits of ChatGPT. Providing better internet infrastructure and offering, more affordable access to the application could further enhance its effectiveness as an educational tool. Overall, the positive reception and reported advantages suggest that ChatGPT is a valuable asset for students in their academic pursuits.

REFERENCES

Aljohani, R. A. (2021). Teachers and Students' Perceptions on the Impact of Artificial Intelligence on English Language Learning in Saudi Arabia. *Journal of Applied Linguistics and Language Research*, *8*(1), 36–47. www.jallr.com

Chairunnisa, N. F. J. T. (2023). Pemanfaatan Penggunaan Chat GPT Dalam Meningkatkan Kemampuan Pengajaran Bahasa Inggris. *Center of Knowledge : Jurnal Pendidikan Dan Pengabdian Masyarakat*, *3*, 65–71. https://doi.org/10.51178/cok.v3i2.1669

Chowdhary, K. R. (2020). Fundamentals of Artificial Intelligence. In *Fundamentals of Artificial Intelligence* (1st ed., pp. 603–649). Springer New Delhi. https://doi.org/https://doi.org/10.1007/978-81-322-3972-7

Fang, T., Yang, S., Lan, K., Wong, D. F., Hu, J., Chao, L. S., & Zhang, Y. (2023). Is chatgpt a highly fluent grammatical error correction system? a comprehensive evaluation. *arXiv preprint arXiv:2304.01746*.

Ginting, P., Batubara, H. M., & Hasnah, Y. (2023). Artificial Intelligence Powered Writing Tools as Adaptable Aids for Academic Writing: Insight from EFL College Learners in Writing Final Project. *International Journal of Multidisciplinary Research and Analysis*, *06*(10), 4640–4650. https://doi.org/10.47191/ijmra/v6-i10-15

Imran, A. A., & Lashari, A. A. (2023). Exploring the World of Artificial Intelligence: The Perception of the University Students about ChatGPT for Academic Purpose. *Global Social Sciences Review*, *VIII*(I), 375–384. https://doi.org/10.31703/gssr.2023(viii-i).34

Imran, M., & Almusharraf, N. (2023). Analyzing the role of ChatGPT as a writing assistant at higher education level: A systematic review of the literature. *Contemporary Educational Technology*, *15*(4). https://doi.org/10.30935/cedtech/13605

King, M. R. (2023). The Future of AI in Medicine: A Perspective from a Chatbot. *Annals of Biomedical Engineering*, *51*(2), 291–295. https://doi.org/10.1007/s10439-022-03121-w

Lenaini, I. (2021). Teknik Pengambilan Sampel Purposive Dan Snowball Sampling. *HISTORIS: Jurnal Kajian, Penelitian & Pengembangan Pendidikan Sejarah*, *6*(1), 33–39. http://journal.ummat.ac.id/index.php/historis

McNamara, D. S., Crossley, S. A., & Roscoe, R. (2013). Natural language processing in an intelligent writing strategy tutoring system. *Behavior Research Methods*, *45*(2), 499–515. https://doi.org/10.3758/s13428-012-0258-1

Mondal, H., & Shaikat, M. (2017). Symposium Recent advances and challenges in the management of retinoblastoma Globe - saving Treatments. *BMC Ophthalmology*, *17*(1), 1. https://doi.org/10.4103/ijo.IJO

Ngo, T. T. A. (2023). The Perception by University Students of the Use of ChatGPT in Education. *International Journal of Emerging Technologies in Learning (IJET)*, *18*(November 2023), 4–19. https://doi.org/https://doi.org/10.3991/ijet.v18i17.39019

Phan, T. N. Le. (2023). Students' Perceptions of the AI Technology Application in English Writing Classes. *Proceedings of the AsiaCALL International Conference*, *4*, 45–62. https://doi.org/10.54855/paic.2344

Pratiwi, K. D. (2016). Students ' difficulties in writing English : A study at the third semester students of English education program At University of Bengkulu. *E Journal Universitas Bengkulu*, *1*(2), 1–13.

Purnamasari, D., Hidayat, D. N., & Kurniawati, L. (2021). an Analysis of Students' Writing Skill on English Descriptive Text. *English Education: Jurnal Tadris Bahasa Inggris*, *14*(1), 101–114. https://doi.org/10.24042/ee-jtbi.v14i1.7943

Setiawan, A., & Luthfiyani, U. K. (2023). Penggunaan ChatGPT Untuk Pendidikan di Era Education 4.0: Usulan Inovasi Meningkatkan Keterampilan Menulis. *JURNAL PETISI (Pendidikan Teknologi Informasi)*, *4*(1), 49–58. https://doi.org/10.36232/jurnalpetisi.v4i1.3680

Shin, M.-H. (2018). *How to use artificial intelligence in the English language learning classroom.* Ndian Journal of Public Health Research and Development. https://www.indianjournals.com/ijor.aspx?target=ijor:ijphrd&volume=9&issue=9&article=102

Wei, L. (2023). Artificial intelligence in language instruction: impact on English learning achievement, L2 motivation, and self-regulated learning. *Frontiers in Psychology*, *14*(November), 1–14. https://doi.org/10.3389/fpsyg.2023.1261955

Zulfa, S., Sari Dewi, R., Nuruddin Hidayat, D., Hamid, F., & Defianty, M. (2023). The Use of AI and Technology Tools in Developing Students' English Academic Writing Skills. *The Annual International Conference on Education*, *1*, 47–63.