

Integrating ChatGPT into the English Essay Writing Class: Perceptions of EFL Preservice Teachers

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Abstract— The incorporation of ChatGPT as a supplementary tool for teaching writing has gained considerable attention. This study aims at exploring perceptions of EFL preservice teachers regarding the use of ChatGPT in the English essay writing class. Adopting a qualitative approach, the research involved seven EFL preservice teachers who participated on a voluntary basis. Data were collected through semi-structured interviews. The participants were third-semester students enrolled in the English Essay Writing course within an English education program. The findings revealed a variety of experiences and difficulties, including the tool effectiveness in enhancing essay organization and clarity, concerns pertaining to its ethical issue and differing levels of reliance. In addition, some participants valued ChatGPT for its effectiveness and feedback, but others drew attention to its shortcomings in terms of encouraging creative thinking. Moreover, the results highlight the significance of striking a balance between AI support and human direction. Limitations of the study are acknowledged, and recommendations for future research are provided.

Keywords— *ChatGPT; EFL preservice teachers; English essay writing*

I. INTRODUCTION

Writing academic essays is a core competency that EFL preservice teachers must master since it is crucial skill for achieving success in both academic and professional context [1]. However, achieving proficiency in writing in a foreign or second language is among the most challenging skills for students to acquire, and it is a competency that only a small number of individuals can genuinely claim to have mastered [2]. Moreover, the writing process is intricate and requires significant time and effort, making timely guidance and

feedback from instructors to support learners effectively [3] [1].

In terms of feedback, machine-generated tools such as ChatGPT can be effectively utilized [4] [1]. ChatGPT, the latest chatbot system developed by OpenAI and powered by the GPT model, has quickly achieved widespread popularity [5]. Numerous studies highlight the positive impact of ChatGPT on enhancing students' writing skills [6][1][3]. While many studies have explored ChatGPT's potential in developing learners' writing abilities, few have specifically examined "EFL preservice teachers' actual use and perceptions of ChatGPT in generating feedback for writing" [4]. It is essential to examine EFL preservice teachers' perception on the utilization of ChatGPT since understanding their views on ChatGPT during writing process may offer insightful information about its advantages, disadvantages, and effectiveness. As it is stated by [7] that students' perception has a greater impact on learning than the actual setting itself. Therefore, the present study investigates EFL preservice teachers' perceptions of using ChatGPT during the essay-writing process.

II. METHOD

A qualitative approach utilizing semi-structured interviews was adopted for this study to obtain EFL preservice teachers' perception in depth. This approach preserves a systematic framework in line with the study goals while permitting freedom in how participants' replies are probed. The interview questions were carefully designed to align with the research objectives. To elicit comprehensive and nuanced insights, the interviews were conducted in Indonesian. Depending on the participants' preferences, interviews were carried out either through online text messaging or face-to-face interactions.

Seven students from the English Education study program (six women and one man) who are in the third semester, all enrolled in an English Essay Writing course, voluntarily participated in this study. Throughout the writing process, the lecturer incorporated ChatGPT to support idea generation and

provide feedback on various aspects, including grammatical accuracy, word choice, and the structural elements of their essays (introduction, body, and conclusion). In adherence to research ethics, participants were required to complete a consent form, and pseudonyms (P1, P2, P3, and so forth) applied to ensure their confidentiality. The demographic characteristics of participants is in the table 3.1.

Table 3.1 Demographic characteristics

Name	Gender	Semester	Prior ChatGPT Usage
P1	Male	3	Yes
P2	Female	3	Yes
P3	Female	3	Yes
P4	Female	3	Yes
P5	Female	3	No
P6	Female	3	No
P7	Female	3	No

The primary variable in this study was how EFL preservice teacher felt about ChatGPT during the essay-writing process. Through participant replies on a number of topics, such as ChatGPT's perceived value in providing feedback, its effect on their work, its usability, and its limits, perception was operationalized. Semi-structured interview questions that addressed participants' past ChatGPT experiences, opinions regarding its function in writing, and thoughts on its benefits and limitations were used to examine these features.

The data were analyzed qualitatively using thematic analysis. [8] argue that thematic analysis is a method that allows for the identification, analysis, and interpretation of themes and patterns of meaning across the entire dataset to address research questions. This approach is suited to the goals of this study since it is especially good at revealing subtle insights and dealing with complicated occurrences. In analyzing the data, I drew on data analysis stages framework proposed by [9]. To ensure the validity of the data, member checking was utilized.

III. RESULTS AND DISCUSSION

Drawing on semi-structured interview data, six emergent themes are presented. These themes cover participants' experiences, their problems on integrating ChatGPT, its role during writing process, ChatGPT's and lecturer's supplementary role, students' reliance and autonomy, and participants' writing originality and authenticity.

Initial Experience with ChatGPT in Process Writing

All participants interviewed expressed that this was their first time using ChatGPT for writing essays. Among them, three participants had never used the instrument before, while four of them had. However, those who were familiar with the tool had only utilized it for searching material for class presentation and answering the queries from the lecturer. They argued

"I have never used ChatGPT before; this is my first time using it for writing essays. Back in the previous course, Paragraph Writing, we didn't use it" (P1, P2, P3, P4, P5, P6, P7).

"I knew about ChatGPT, but I only used it to search for materials for presentations or to answer questions from lecturers" (P1)

When participants initially used ChatGPT, they perceived that using ChatGPT is ineffective since they faced a number of difficulties. However, after using ChatGPT for a while, participants improved their opinion of it in spite of these early difficulties. They valued the tool's immediate feedback feature, which made it possible for them to recognize and correct their errors promptly. They were able to write essays more effectively and with higher quality because to this efficiency.

"After learning about it, it became convenient. Feedback was quick, allowing us to identify and correct mistakes faster. Previously, we had to submit assignments three days before class and only received feedback on the day of the course." (P7)

"After using ChatGPT, we combined feedback from friends, lecturers, and ChatGPT to improve our writing." (P2)

The participants' experiences in incorporating ChatGPT during their writing process provide them with revolutionary view on the role of technology in education. It is as a tool to enhance learning [10] [11] [12] and it also serves as writing assistant [13]. Additionally, ChatGPT exposed students to have immediate feedback [6] [14] that was very different from their previous use of delayed responses or conventional feedback. For the problems or challenges they encountered, it will be discussed as follows.

Challenges in Adopting ChatGPT for Process Writing

There are several drawbacks to using ChatGPT for essay writing, especially when students are first getting used to it. The first is the participants' incapacity to create precise and comprehensive prompts. Ineffective prompt leads to irrelevant feedback from ChatGPT.

"At first, I was a bit awkward and gave unspecific prompts, resulting in general feedback." (P5)

Their incapacity to create precise and comprehensive suggestions resulted in their obtaining feedback that was either ambiguous or unrelated[15]. One participant also acknowledged that they had more trouble because they had forgotten to ask ChatGPT for the sources.

"When I first used ChatGPT, its feedback didn't match my expectations because my prompts were general and lacked the context and detail I wanted." (P6)

The second is students' limited understanding on the feedback provided by ChatGPT. Thus, some students ask the lecturer to clarify the feedback.

"Sometimes, I don't understand the feedback from ChatGPT, so I ask my lecturer for explanations and relevant examples." (P3)

The third is technical error. One of participants voiced that they usually forget to ask ChatGPT to comprise the sources.

"I often forgot to ask ChatGPT to include the sources." (P1)

The fourth is the students' worries on plagiarism. All participants agreed that the output from ChatGPT is beneficial. However, four of them were reluctant to use it.

"I don't directly copy-paste from ChatGPT because I am afraid of plagiarism." (P6, P7, P1, P2)

Those difficulties greatly influenced how they initially used the technology, frequently leading to confusion or irritation. For example, participants said they were unable to generate precise and comprehensive prompts, which resulted in feedback that was either ambiguous or unrelated. However, participants discovered that their first encounter with ChatGPT progressively changed the way they approached writing. They began honing their prompts and learning how to ask for more focused feedback as they grew more accustomed to the tool. As students gained more experience with the tool, they were able to fully utilize its capabilities, which improved the overall effectiveness and quality of their writing. That's why to overcome such difficulties, it is important to train students on how to develop learners' productive and critical use of ChatGPT [15].

Despite the difficulties they encountered, ChatGPT provides opportunity for students to improve their writing skills. Following part discusses the benefits of using ChatGPT for improving students' writing ability.

ChatGPT's Role in Enhancing Essay Writing Skills

The data from interview highlight the role of ChatGPT in helping participants to improve their writing skill [3]. They got feedback on their writing [6] especially on generating idea on selected topic, introductory paragraph development, content organization, grammar [1], diction, and punctuation. Related to generating idea on a selected topic, two participants voiced that

"Using ChatGPT helps me in the process of writing an essay. I've already decided on the topic I want to discuss and gathered about 10 sources, but I'm unsure which parts to write about. So, I create a prompt in ChatGPT by providing data from those 10 sources to generate ideas for me." (P4)

"ChatGPT helps me when I'm confused about which part of my topic I should write about." (P1)

In terms of writing introductory paragraph, majority of participants reported that ChatGPT was especially useful for assisting them in creating opening paragraph. They emphasized its capacity to offer customized recommendations and tackle particular difficulties in creating impactful openings.

"It's really helpful when I'm writing an introductory paragraph." (P1, P2, P3, P4, P5, P6, P7)

In addition, some participants faced obstacles in writing the bridge or the line that links the hook and the thesis statement in the introduction, was a persistent problem for the participants. By providing helpful advice and examples, ChatGPT successfully resolved this problem and improved the coherence and flow of their introductions.

"I struggle with developing the bridge, which is the sentence connecting the hook to the thesis statement. ChatGPT provides suggestions for improvement here." (P2, P3, P4)

ChatGPT also gave participants useful comments on their essay openings, highlighting places where the introduction lacked interest and too specific.

"When writing the introductory paragraph, I received feedback on my first sentence, which wasn't engaging enough." (P6)

"For me, the feedback suggested making the hook more general." (P7)

Thus, ChatGPT is essential for helping students with important essay writing tasks, including creating the hook, bridge, and thesis statement. In addition, students emphasized how ChatGPT addressed their difficulties in making coherent connections between ideas and offered helpful recommendations for enhancing the opening paragraph.

Related to the content organization, all participants agreed that ChatGPT gave them valuable input for ordering their idea in several paragraphs.

"My paragraphs are not systematic. So, I get input on the order of the paragraphs I have created so that the paragraphs are coherent." (P2)

Additionally, ChatGPT highlights the sentences which do not support thesis statement.

"I received feedback that one of my body paragraphs was not aligned with the thesis statement. I was also impressed by the diction feedback provided." (P2 & P3)

Those findings showcased ChatGPT's contributions to essay writing was its capacity to help students improve the logical flow and argument structure of their writing. According to the participants, they frequently found it difficult to keep their points of view consistent throughout the essay. ChatGPT provided assistance by highlighting passages where the argument become hazy or where there were poor transitions. Through this criticism, students were able to enhance their writing's coherence and persuasiveness, two qualities that are essential for creating essays that are captivating.

Regarding the feedback on grammar, several participants reported that such feedback made them aware on their grammatical errors. They voiced that even though they understood grammar rules, they frequently used them incorrectly when writing. They were able to enhance their writing and identify these mistakes early thanks to ChatGPT's real-time feedback. Students improved their writing habits and gained confidence in their abilities as a result of the constant reinforcement of grammar norms. The participants perceived that ChatGPT was helpful in correcting grammatical problems and punctuation usage.

"For grammar, I felt reminded about my mistakes. I know the rules, but I often forget to implement them correctly while writing." (P5)

In relation with the word choice, Chat GPT contribute a lot on the use of appropriate terminology and avoiding repetitious words.

"When writing, I often think about using better phrases to express the terms in my essay. ChatGPT provided me with appropriate diction that matched what I had envisioned." (P1)

"I got feedback from ChatGPT that the term four healthy five perfect (empat sehat lima sempurna) does not exist in the English context. So, I have to look for the appropriate term in English." (P7)

Students' ability to employ a wide variety of exact terminology was greatly enhanced by ChatGPT. All participants shared how the tool improved the quality of their language by suggesting more complex or precise word choices. By avoiding repetitious language and focusing on diction, they were able to write essays that were more polished.

Furthermore, another contribution of ChatGPT is on feedback for punctuation. In the interviews, some participants often forgot to use period, comma, and capital letter. Thus, the tool reminds them on the punctuation usage.

"The same applies to punctuation; I received feedback that helped me correct errors." (P3)

Based on the feedback participants received from ChatGPT during their writing process, it provided them with practical knowledge and guidance that improved their writing outcome [1][3][4][5]. Although ChatGPT provides participants with various and immediate feedback, the role of teacher is needed [6]. It will be more impactful to improve students' writing skill when combined with the individualized education given by lecturers.

Complementary Role of ChatGPT and Human Instructors

The interview results emphasized that the lecturer has vital role in students' learning. Therefore, ChatGPT and lecturer should collaborate to give insightful criticism that improves students' writing abilities and guarantees better writing results [6].

"Although ChatGPT provides quick feedback, I often ask my lecturer for clarification and further explanation regarding the feedback." (P7, P5)

"Sometimes, I don't understand the feedback from ChatGPT, so I ask my lecturer for explanations and relevant examples." (P3)

"I like to combine feedback from my peers, ChatGPT, and my lecturer to improve my writing." (P1, P2, P4)

The results demonstrated how ChatGPT and human teachers work together to improve students' writing abilities. Although ChatGPT offers instant feedback on structural components like grammar, flow, and organization, human teachers offer more in-depth contextual understanding and subtle explanations. This two-pronged strategy fits with the idea of blended learning, which combines human knowledge and technology to produce a holistic educational experience.

The findings imply that teachers should strive to incorporate ChatGPT and other AI technologies into their lesson plans, stressing that they should be used as additional resources rather than as a substitute. The advantages of such tools can be maximized when the teachers encourage open contact with students and give them instructions on how to

evaluate ChatGPT feedback. Similarly, [16] reported that combining artificial and human intelligence in the classroom can greatly improve conventional teaching strategies and produce a more dynamic and adaptable learning environment.

In addition, the value of individualized learning experiences is highlighted by ChatGPT's complementing role with human teachers. Human teachers can accommodate each student's individual needs and learning preferences, while ChatGPT can offer automated, error-focused feedback. They are able to spot knowledge gaps or patterns of misunderstanding that may not be apparent in ChatGPT's answers. Beyond simple fixes, this tailored feedback promotes self-improvement and deeper comprehension.

Furthermore, human teachers can not only provide clarifications but also inspire pupils and help them develop their writing confidence. The growth of pupils' independence is greatly influenced by the instructors' emotional support and encouragement. Because they could be more likely to believe a human teacher's comments than a response produced by a machine, this is especially important for students who are worried about their writing skills.

Therefore, students must be able to use each tool efficiently [15] in order to improve the collaborative dynamic between ChatGPT and teachers. In order for students to make well-informed judgments about how to implement each piece of advice, teachers can assist students in developing the crucial skills necessary to distinguish between the feedback given by ChatGPT and that of human instructors. Students can leverage the benefits of both AI and human assistance by adopting a balanced approach, which will improve their writing results. However, this cooperative method highlights the crucial relationship between students' dependence on ChatGPT and their growth as autonomous writers.

Dependency and Autonomy in Writing with ChatGPT

Students' behaviors have been shown to range from reliance to the development of greater autonomy when ChatGPT has been incorporated into the writing process. Such students' reliance can be negative impact of ChatGPT utilization [5]. Some students were dependent on ChatGPT, especially when they were having trouble with things like coming up with ideas, enhancing their diction, or making connections between phrases. For example, three participants relied too much on ChatGPT and used its output directly because they were insecure about their own work and thought ChatGPT's output was better than their own.

However, some participants showed autonomy by using ChatGPT as an additional tool [4] rather than as their only source of information. They made deliberate changes to their works by combining comments from their peers and instructors with ChatGPT's feedback.

"I like to combine feedback from my peers, ChatGPT, and my lecturer to improve my writing." (P1, P5, P7)

Furthermore, half of participants showed their attempt to strike a balance between the advantages of ChatGPT and their own critical thinking and decision-making skills when writing. It was seen from the result of interviews. They uttered:

"I check the feedback from ChatGPT with other sources or my lecturer because I do not trust ChatGPT." (P1, P5, P6, P7)

They also added that by using ChatGPT sparingly, they were able to improve their writing abilities while still having control over the caliber and uniqueness of their output. They underlined that although ChatGPT offered fresh viewpoints or assisted them in overcoming writer's block, they were still ultimately in charge of the final manuscript. Another theme arise based on the result of interviews is the participants' writing originality and authenticity.

Originality and Authenticity

The interview results demonstrated that some participants admitted to copying ChatGPT's output, some other participants, on the other hands, recognized the value of originality. They had conflicting opinion regarding the originality and authenticity of their writing when utilizing ChatGPT. Some students were worried about the ethical ramifications of depending too much on ChatGPT content, while others valued the tool's capacity to offer suggestions and fix grammatical faults.

"I feel hesitant and confused about copying the output from ChatGPT because I'm afraid of being accused of plagiarism." (P1, P5, P7)

For some students, they perceived that to avoid plagiarism they treat ChatGPT feedback as a guide not a final product. Actually, students' reluctance to directly copy ChatGPT content reflects a broader awareness of academic integrity [14]. To prevent this academic dishonesty, the institution should create clear guidelines on the proper usage of AI in academic writing [17].

They also viewed that uniqueness of their writing was a crucial component of their academic identity. Although ChatGPT might offer helpful recommendations, they stated that depending just on its results would jeopardize their educational process and development as authors. For them, being authentic in their writing meant making sure that their ideas and opinions were accurately conveyed in addition to avoiding plagiarism.

The absence of explicit guidelines on the incorporation of AI tools i.e. ChatGPT into academic writing, however, has left some students uncertain about the moral limits. Creating thorough seminars or training sessions could allay these worries and provide students the tools they need to strike a balance between using AI to help them and preserving the individuality of their writing.

Based on those findings above, it raises a number of important issues. First is teaching and guiding students on how to utilize ChatGPT effectively with focusing on creating focused prompts [15], comprehending feedback, and maintaining academic integrity[17]. With appropriate guidance, students will be able to instruction can formulate appropriate prompt and receive suitable response from ChatGPT. In addition, training students with how to understand and evaluate feedback from the tool will assist them improve their writing. Such abilities are essential for assuring the ethical usage of ChatGPT as well as for helping them write better.

Second, educational institution might need to put in place clear guidelines and instruction on how to use ChatGPT in academic settings in an ethical manner [6] [18]. For example, the institution conduct workshop related to ChatGPT usage. Therefore, students could learn responsible ChatGPT usage techniques, such as how to properly cite sources to avoid plagiarism. Such regulations foster an academic environment that promotes integrity and openness in addition to assisting students in understanding the ethical limits of technology use.

Third, teachers should create assignments that strike a balance between ChatGPT and peer collaboration and critical thinking in order to avoid an excessive dependence on ChatGPT and maintain students' academic independence. This would enable students to use ChatGPT tools to their advantage while still retaining their autonomy and sense of academic identity when writing. For instance, the students discuss and analyze their ChatGPT feedback together with the lecturer and their friends.

Fourth, it deals with academic assessment system. When students have access to ChatGPT that can provide excellent work fast, how can educational institutions uphold academic standards. The rise of AI-generated content that is identical to human creations may upend established evaluation paradigms, including written essays. Academic integrity regulations and evaluation techniques must be carefully reexamined in light of this. Alternatively, process-based assessment should be utilized.

Related to the problem on trusting others because they were afraid of being accused of plagiarism if they simply copied the content produced by ChatGPT, this worry is a reflection of a larger lack of clarity regarding the moral limits of utilizing ChatGPT in educational settings. Thus, there must be a clear policy on the ethical use of ChatGPT tools in academic settings. With this policy, the students will more confident in using this tool. Additionally, it will improve trust amongst all parties involved in schooling and lessen the possibility of misuse.

IV. CONCLUSIONS

ChatGPT was a helpful tool as well as challenge for participants since it provides constructive feedback and reduces cognitive load. However, difficulties like deciphering ChatGPT-generated feedback, worries about uniqueness, over-reliance and concerns about plagiarism brought attention to the need of human intervention. Furthermore, the findings imply that the interplay between ChatGPT and human instructors is a crucial factor in fostering effective and ethical writing practices. These insights underline the multifaceted impact of ChatGPT tools on writing pedagogy and the importance of balancing technological and human input to promote writing proficiency and uphold academic integrity.

Based on the findings, it is suggested that the academic institution should create regulations to address issues around authenticity and creativity. It is also advisable to conduct ChatGPT feedback interpretation workshop. It aims at assisting students in understanding and utilizing AI-generated feedback. Additionally, the institution needs to be proactive in

adapting so that tests continue to be fair, relevant, and indicative of students' actual ability. To uphold academic standards in this technological age, a focus on procedure, teamwork, and the moral use of AI is essential. For the lecturers, it is recommended that they should provide clear instructions and training on the moral and efficient use of AI tools like ChatGPT.

It is inevitable that there are several limitations of this study. First, the study only included a small sample of EFL pre-service teachers from one particular institution, which would limit generalizability of the results. Thus, future research should recruit many participants from various institutions. Second, the study used self-reported data, which could have been skewed by the subjective biases of participants. Therefore, observation should be utilized to complement self-reported data and give a more comprehensive view the subject under investigation.

REFERENCES

- [1] P. Polakova and P. Ivenz, "The impact of ChatGPT feedback on the development of EFL students' writing skills," *Cogent Educ.*, vol. 11, no. 1, p., 2024, doi: 10.1080/2331186X.2024.2410101.
- [2] D. Fonkamo and A. Zeru, "Exploring the impediments on the application of reflective teaching in EFL paragraph writing classes," *Cogent Educ.*, vol. 9, no. 1, 2022, doi: 10.1080/2331186X.2022.2109648.
- [3] J. Wang et al., "The impact of using ChatGPT on academic writing among medical undergraduates," *Ann. Med.*, vol. 56, no. 1, p., 2024, doi: 10.1080/07853890.2024.2426760.
- [4] M. F. Teng, "'ChatGPT is the companion, not enemies': EFL learners' perceptions and experiences in using ChatGPT for feedback in writing," *Comput. Educ. Artif. Intell.*, vol. 7, no. July, 2024, doi: 10.1016/j.caeai.2024.100270.
- [5] B. Klimova and V. P. L. de Campos, "University undergraduates' perceptions on the use of ChatGPT for academic purposes: evidence from a university in Czech Republic," *Cogent Educ.*, vol. 11, no. 1, p., 2024, doi: 10.1080/2331186X.2024.2373512.
- [6] J. S. Barrot, "Using ChatGPT for second language writing: Pitfalls and potentials," *Assess. Writ.*, vol. 57, no. March, p. 100745, 2023, doi: 10.1016/j.asw.2023.100745.
- [7] N. J. Entwistle, "Approaches to learning and perceptions of the learning environment - Introduction to the Special Issue," *High. Educ.*, vol. 22, no. 3, pp. 201–204, 1991, doi: 10.1007/BF00132287.
- [8] V. Clarke and V. Braun, "Thematic analysis," *J. Posit. Psychol.*, vol. 12, no. 3, pp. 297–298, 2016, doi: 10.1080/17439760.2016.1262613.
- [9] V. Braun and V. Clarke, "Using thematic analysis in psychology," *Qual. Res. Psychol.*, vol. 3, no. 2, pp. 77–101, 2006, doi: 10.1191/1478088706qp063oa.
- [10] M. Farrokhnia, S. K. Banihashem, O. Noroozi, and A. Wals, "A SWOT analysis of ChatGPT: Implications for educational practice and research," *Innov. Educ. Teach. Int.*, vol. 61, no. 3, pp. 460–474, 2024, doi: 10.1080/14703297.2023.2195846.
- [11] J. K. M. Ali, M. A. A. Shamsan, T. A. Hezam, and A. A. Q. Mohammed, "Impact of ChatGPT on Learning Motivation:," *J. English Stud. Arab. Felix*, vol. 2, no. 1, pp. 41–49, 2023, doi: 10.56540/jesaf.v2i1.51.
- [12] J. Oranga, A. Matere, and J. Ndaita, "ChatGPT (AI) Integration into Teaching and Learning : Opportunities and Challenges," vol. 9, pp. 102–110, 2024.
- [13] I. Werdiningsih, Marzuki, and D. Rusdin, "Balancing AI and authenticity: EFL students' experiences with ChatGPT in academic writing," *Cogent Arts Humanit.*, vol. 11, no. 1, p., 2024, doi: 10.1080/23311983.2024.2392388.
- [14] Y. Liu et al., "Summary of ChatGPT-Related research and perspective towards the future of large language models," *Meta-Radiology*, vol. 1, no. 2, 2023, doi: 10.1016/j.metrad.2023.100017.
- [15] D. R. C. Javier and B. L. Moorhouse, "Developing secondary school English language learners' productive and critical use of ChatGPT," *TESOL J.*, vol. 15, no. 2, 2024, doi: 10.1002/tesj.755.
- [16] K. Pahi, S. Hawlader, E. Hicks, A. Zaman, and V. Phan, "Enhancing active learning through collaboration between human teachers and generative AI," *Comput. Educ. Open*, vol. 6, no. May, p. 100183, 2024, doi: 10.1016/j.caeo.2024.100183.
- [17] D. R. E. Cotton, P. A. Cotton, and J. R. Shipway, "Chatting and cheating: Ensuring academic integrity in the era of ChatGPT," *Innov. Educ. Teach. Int.*, vol. 61, no. 2, pp. 228–239, 2024, doi: 10.1080/14703297.2023.2190148.
- [18] I. M. García-López, C. S. González González, M. S. Ramírez-Montoya, and J. M. Molina-Espinosa, "Challenges of implementing ChatGPT on education: Systematic literature review," *Int. J. Educ. Res. Open*, vol. 8, no. November 2024, 2025, doi: 10.1016/j.ijedro.2024.100401.