INDONESIAN STUDENTS' PERCEPTIONS OF CHATGPT FOR ENGLISH ESSAY WRITING

[PERSEPSI MAHASISWA INDONESIA TERHADAP CHATGPT DALAM PENULISAN ESAI BAHASA INGGRIS]

Rentauli Silalahi
Institut Teknologi Del
rentaulisilalahi@gmail.com

Abstract

ChatGPT, an AI tool launched in November 2022, has gained popularity among EFL students for assisting them in English essay writing. Despite its popularity, little is known about Indonesian students' perceptions of ChatGPT's usefulness, ease of use, and limitations of ChatGPT in essay writing. To address this gap, a survey with closed and open-ended questions was conducted with 76 first-year undergraduate students from IT programmes at a private university in Indonesia. Quantitative data were analyzed using descriptive statistics, and open-ended responses were analyzed using thematic analysis. The theoretical framework of the Technological Acceptance Model (TAM) underpinned the analysis. The findings reveal that students found ChatGPT easy to use because it did not demand specific skills and promptly understood and responded to their prompts. ChatGPT was deemed helpful for various reasons, with its ability to provide relevant materials, check vocabulary and sentence structures, generate ideas, and translate Indonesian sentences into English being the top five

reasons. However, students also highlighted three main limitations: ChatGPT's tendency to provide irrelevant or unclear answers and its difficulty understanding complex instructions. This study indicates that while students use ChatGPT for English essay assistance, they remain aware that its answers may not always be appropriate.

Keywords: ChatGPT; artificial intelligence; english essay writing; technological acceptance model; students' perception of ChatGPT

Abstrak

ChatGPT, sebuah alat kecerdasan buatan yang diluncurkan di bulan November 2022, telah mendapatkan popularitas di kalangan mahasiswa yang belajar bahasa Inggris sebagai bahasa asing dalam membantu penulisan esai Bahasa Inggris. Meskipun sudah populer, persepsi mahasiswa Indonesia terhadap kegunaan ChatGPT masih belum banyak diketahui, seperti tentang kemudahan penggunaan ChatGPT dan keterbatasan ChatGPT dalam penulisan esai bahasa Inggris. Untuk menjawab kekurangan informasi ini, survei dengan pertanyaan tertutup dan terbuka dilakukan pada 76 mahasiswa tahun pertama dari program IT di sebuah universitas swasta di Indonesia. Data kuantitatif dianalisis menggunakan statistik deskriptif, dan jawaban terbuka dianalisis menggunakan analisis tematik. Kerangka teori Model Penerimaan Teknologi (TAM) mendasari analisis ini. Hasil temuan menunjukkan bahwa mahasiswa menganggap ChatGPT mudah digunakan karena tidak membutuhkan keterampilan khusus dan mampu dengan cepat memahami serta merespons permintaan mereka. ChatGPT dianggap berguna untuk setidaknya lima alasan utama: kemampuan ChatGPT untuk menyediakan materi yang relevan, memeriksa kosa kata dan struktur kalimat, menghasilkan ide, serta menerjemahkan kalimat Bahasa Indonesia ke dalam Bahasa Inggris. Meski demikian,

mahasiswa juga menggarisbawahi tiga keterbatasan utama dari penggunaan ChatGPT: kecenderungan ChatGPT untuk memberikan jawaban yang tidak relevan atau tidak jelas, dan kesulitan ChatGPT memahami instruksi yang kompleks. Studi ini menunjukkan bahwa meskipun mahasiswa memanfaatkan ChatGPT untuk membantu penulisan esai Bahasa Inggris, mereka tetap menyadari bahwa hasil yang diberikan mungkin tidak selalu tepat.

Kata Kunci: ChatGPT; kecerdasan buatan; penulisan esai bahasa inggris; model penerimaan teknologi; persepsi mahasiswa terhadap ChatGPT

Introduction

Chat GPT, launched in November 2022; 'GPT for "Generative Pretrained Transformer", is an artificial intelligence (AI) tool that has been trained to continue the text or written dialogues, much like humans do, using phenomenal amounts of textual data' (Granić & Marangunić, 2019; Rousseau, 2023, p. 7). Though several AI-based writing tools can assist students in enhancing their writing skills and performance, such as Grammarly, QuillBot, NoRedInk, and ArgRewrite (Wu, 2024), ChatGPT has become more popular among non-native English speaker students.

Studies across Asian countries, like Malaysia (Rahim et al., 2023), Indonesia (Harunasari, 2023; Marzuki et al., 2023; Nugroho et al., 2023, 2024), Vietnam (Thao et al., 2023), India (Mahapatra, 2024), South Korea (Eunim & Youngsang, 2023), and China (Ge, 2024; Xu et al., 2024) reported that ChatGPT has provided significant and prompt assistance to students from non-native English speaking countries in their English writing endeavours. ChatGPT mainly assists students to check and modify their sentence structures to sound clear and coherent (Eunim & Youngsang, 2023; Ge, 2024; Marzuki et al., 2023; Nugroho et al., 2023, 2024; Thao et al., 2023; Xu et al., 2024). When it comes to reviewing a student's writing, ChatGPT takes on the role of an assessor to identify and correct errors. ChatGPT can correct students' errors in grammar (Eunim & Youngsang, 2023; Harunasari, 2023; Jarrah et al., 2023;

Mahapatra, 2024; Nugroho et al., 2023, 2024; Özçelik & Ekşi, 2024; Rahim et al., 2023), signposts (Mahapatra, 2024), spelling (Ge, 2024; Harunasari, 2023; Nugroho et al., 2024), syntax, and typos (Nugroho et al., 2023, 2024). The other sophisticated tasks ChatGPT can perform are paraphrasing, revising or editing, summarising, translating, and proofreading texts (Črček & Patekar, 2023; Eunim & Youngsang, 2023; Nugroho et al., 2023, 2024).

ChatGPT has also resulted in self-development in students' writing skills. Students admit that ChatGPT has made them gain more confidence in expressing themselves through writing (Rahim et al., 2023), made them a faster writer (Mahapatra, 2024) and more proficient in self-editing (Özçelik & Ekşi, 2024), increase their productivity in writing (Jarrah et al., 2023), and develop their interest in writing (Thao et al., 2023), autonomy and control over their learning process (Mahapatra, 2024; Thao et al., 2023), and their knowledge of vocabulary (Eunim & Youngsang, 2023; Ge, 2024; Mahapatra, 2024; Marzuki et al., 2023; Nugroho et al., 2023, 2024; Rahim et al., 2023). Moreover, increased interaction with ChatGPT, including receiving responses from it, can help students develop their skills in crafting thoughts and arguments, providing a personalized and interactive learning experience (Marzuki et al., 2023; Rahim et al., 2023).

While doing a writing assignment, students may face writer's block for having no idea how to address their assignment or have limited knowledge of the assignment given. ChatGPT plays a significant role as a quick personal assistant that generates ideas for the students and saves them time (Cornish & Larter, 2024; Črček & Patekar, 2023; Harunasari, 2023; Mahama et al., 2023; Mahapatra, 2024; Marzuki et al., 2023; Nugroho et al., 2024). Students claimed that ChatGPT could provide them with immediate feedback, suggestions, clues, and ideas (Eunim & Youngsang, 2023; Ge, 2024; Jarrah et al., 2023; Nugroho et al., 2023; Rahim et al., 2023; Xu et al., 2024), even do most of the writing for them. For example, ChatGPT may produce concise abstracts, introductory paragraphs, literature sections, initial drafts (Imran & Lashari, 2023) and the entire writing assignment (Črček & Patekar, 2023).

However, some empirical studies have found contrasting opinions regarding the significant impact of ChatGPT on students' writing. While Athanassopoulos et al. (2023) and Cornish and Larter (2024) found that

ChatGPT helped improve students' writing, Bašić et al. (2023) found the contrary. Athanassopoulos et al. (2023) found improvement in migrant students' writing in terms of the number and unique words used and average words used in a sentence in their second attempt to write on the same topic due to having assistance from ChatGPT. The study showed that students learned from suggestions of revised sentences given by ChatGPT and learned from differences between their original work and the suggested modified sentences given by ChatGPT. In a nother study, Cornish and Larter's (2024) study, who examined undergraduate students' writing, found that students' writing significantly improved with ChatGPT assistance. In contrast, Bašić et al. (2023), who experimented with two groups of students writing an essay with and without the assistance of ChatGPT, found that the group of students who used ChatGPT did not perform better than those without ChatGPT. The potential causes were that students using ChatGPT need "more time to finalise the task and assemble the content" (p. 4) due to their overreliance and lack of familiarity with ChatGPT.

While ChatGPT may assist students in a variety of ways, it also has some limitations and may cause negative impacts. The first issue is concern over academic dishonesty, as the responses students copy from ChatGPT may be identified as plagiarism (Jarrah et al., 2023; Mahama et al., 2023; Nugroho et al., 2023, 2024; Thao et al., 2023). Meanwhile, overreliance on the AI (Mahama et al., 2023; Mahapatra, 2024; Marzuki et al., 2023; Shakil & Siddiq, 2024; Thao et al., 2023) poses a significant threat to students' creativity and critical thinking (Cornish & Larter, 2024; Mahama et al., 2023; Mahapatra, 2024; Marzuki et al., 2023; Shakil & Siddiq, 2024; Thao et al., 2023). ChatGPT's answers can also be confusing for students, mainly when ChatGPT offers answers with advanced vocabulary, overly complex sentences (Özçelik & Ekşi, 2024), or repetitive and monotonous answers (Nugroho et al., 2023). Meanwhile, other studies suggested that ChatGPT answers could not be taken for granted as they may lack accuracy and reliability (Eunim & Youngsang, 2023; Imran & Lashari, 2023; Mahama et al., 2023; Nugroho et al., 2023, 2024; Thao et al., 2023).

To study the perspectives of EFL students of ChatGPT on English essay writing, some studies have applied the Technology Acceptance Model (TAM) to explore EFL students' perceptions of the usefulness and ease of use of the latest AI model, ChatGPT. TAM is considered suitable

for examining university students' intention to use ChatGPT because the perceived usefulness and ease of use of the tool are crucial factors driving its adoption (Shaengchart, 2023). Similarly, TAM provides a comprehensive framework for understanding and analysing the adoption of ChatGPT among university students for their English as a Foreign Language (EFL) writing assignments.

Theoretical Framework: Technology Acceptance Model

The Technology Acceptance Model, which originated in the psychological Theory of Reasoned Action (TRA), is a pivotal framework for comprehending the factors influencing human behaviour regarding the potential acceptance or rejection of technology (Davis & Venkatesh, 1996; Granić & Marangunić, 2019). TAM was introduced by Fred Davis in the mid-1980s under contract with IBM Canada, Ltd., to assess the market potential of various emerging PC-based applications, including multimedia, image processing, and pen-based computing, to guide investments in new product development (Davis & Venkatesh, 1996). TAM suggested that there are three key factors influencing a user's motivation to adopt a system or technology: their perception of how easy it is to use, their belief in its usefulness, and their overall attitude towards using it, as shown on the TAM model below displaying the three main motivational variables: attitude toward using, perceived usefulness, and perceived ease of use (Davis, 1993; Davis & Venkatesh, 1996).
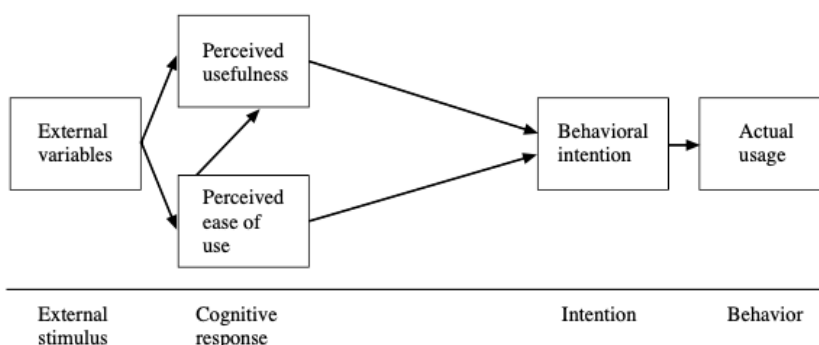

Figure 1. Technology Acceptance Model (adopted from Davis and Venkatesh, 1996, p. 20)

Davis (1993) and Davis and Venkatesh (1996) developed Likert scale survey questions for their studies, allowing participants to rate

their agreement or disagreement on a scale from 1 to 7. Davis (1993) investigated the perceived usefulness of electronic mail, where participants rated statements such as how much they believed using electronic mail improved the quality of their work, gave them greater control over their tasks, enabled quicker task completion, supported critical job aspects, increased productivity, enhanced job performance, allowed more work to be accomplished, improved job effectiveness, and made their job easier.

Similarly, participants were asked to rate their perceived ease of use of electronic mail on a seven-point Likert scale in terms of statements like finding the system cumbersome, ease of learning to operate it, level of frustration while interacting with it, ease of achieving desired tasks, flexibility of the system, ease of remembering how to perform tasks, mental effort required for interaction, clarity of interaction, and effort needed to become proficient at using electronic mail.

Similarly, Davis and Venkatesh (1996) surveyed participants on their perceived usefulness and ease of use of WordPerfect, as well as their intention to use WordPerfect. The perceived usefulness questionnaire assessed participants' agreement or disagreement regarding how much they believed WordPerfect improved their performance, increased productivity, and enhanced effectiveness. Meanwhile, the perceived ease of use questionnaire measured participants' agreement or disagreement regarding how much they believed interacting with WordPerfect required mental effort, how easy it was to use, and how easy it was to achieve desired tasks with WordPerfect. Additionally, the intention to use the WordPerfect questionnaire assessed participants' agreement or disagreement regarding their intention to use WordPerfect, assuming they had access to it and given that they had access to WordPerfect.

The studies that have applied TAM to studying EFL students' perceptions of ChatGPT on English essay writing include Ge's (2024), Thao et al.'s (2023), and Xu et al.'s (2024). First, grounded in TAM and the Information System Success Model, Ge's (2024) quantitative study investigated Chinese university students' acceptance of ChatGPT in EFL writing. Using modified TAM variables measured on a Likert scale with 300 Chinese university students, the study found that students used ChatGPT because it provided them with immediate feedback, real-time

individualized writing assistance, lexical enrichment, and grammar precision. Second, Thao et al. (2023) who studied Vietnamese students' perceptions of using ChatGPT in their EFL writing, confirmed that while students found ChatGPT beneficial, they also experienced disadvantages. Grounded in Vygotsky's Constructivist Learning Theory and TAM, the study collected data from semi-structured interviews with 20 students from two Vietnamese institutions. Thematic analysis revealed that students became more interested in EFL writing after using ChatGPT, perceiving it as helpful in enhancing writing abilities and giving them more control over their learning process. However, students also admitted to becoming overly reliant on technology, limiting their creativity in expressing themselves in their writing. Additionally, concerns about data accuracy and safety were raised, with students fearing that the information provided by ChatGPT might need to be more accurate and that their stored data might need to be more secure, leading to issues of accuracy, confidentiality, and ethics. Finally, a similar concern was reported by Xu et al. (2024), who adopted the TAM theoretical framework to investigate Chinese undergraduate and postgraduate students' perceptions of ChatGPT use in their essay writing. Through interviews, they found that students raised concerns over data safety and privacy when storing their data on the ChatGPT system. However, they still acknowledged the benefits of using ChatGPT to improve their academic achievement.

Taking into account the pertinent use of TAM to examine EFL students' perceptions of ChatGPT's usefulness and ease of use across various settings, as well as the limited literature on applying TAM in the Indonesian higher education context to explore universities' perspectives on ChatGPT's usefulness, ease of use, and limitations in English essay writing (Harunasari, 2023; Marzuki et al., 2023; Nugroho et al., 2023, 2024), this study aims to bridge this gap by answering the following questions:

1. What are Indonesian university students' perceptions of the ease of use of ChatGPT for English essay writing?
2. How do Indonesian university students perceive the usefulness of ChatGPT in assisting with English essay writing?
3. What are the limitations of ChatGPT as perceived by Indonesian university students in the context of English essay writing?

TAM is particularly relevant to this study because it focuses on the key factors influencing users' willingness to adopt and utilise technology, primarily revolving around their perception of its usefulness and ease of use. Perceived usefulness in this context refers to students' beliefs about how ChatGPT can enhance their EFL writing skills and academic performance. Meanwhile, perceived ease of use pertains to students' perceptions of how user-friendly and accessible ChatGPT is for their writing tasks. However, this study aims to provide students with ample space to express their perceptions of ChatGPT's usefulness and ease of use for their English essay writing.

Research Method

Data Collection and Analysis

This study was conducted at a private university in North Sumatra. Data were purposively collected from first-year students majoring in Information Technology from two different fields of study who had recently used ChatGPT for a writing assignment. Purposely collecting data from this group of students was relevant as it aligned with the parameters of the study's research questions, goals, and purposes (Punch, 2014; Tracy, 2013). Data were collected through an online questionnaire developed using Google Forms where the link was distributed to students through their class captains. During a classroom briefing to introduce the study, students were informed that their participation was voluntary and that their data would remain confidential, including their responses and names, university affiliation, and field of study. Consent forms from the students were collected afterwards. The survey remained open for one week from 17-23 April 2024 to allow for voluntary participation from selected classes. Out of a population of 87 students, 76 valid responses were collected, resulting in a response rate of 87%. The sample consisted of 40 male students (52.63%) and 36 female students (47.37%).

This study, which employs a mixed-method research design, uses a questionnaire as the primary instrument. Based on the Technology Acceptance Model (TAM), the questionnaire was developed to investigate students' perceptions of ChatGPT's ease of use, usefulness, and limitations for English essay writing. The questionnaire was

intentionally designed to include both closed and open-ended questions. The closed-ended questions offered participants predetermined response options, which included inquiries about the participants' demographic details, familiarity with ChatGPT, and whether students agree or disagree with statements regarding the ease of use and usefulness of ChatGPT, as well as its limitations. The open-ended questions directly followed the closed-ended questions regarding the students' agreement or disagreement towards the ease of use, usefulness, and limitations of ChatGPT. The open-ended questions allowed for more detailed and qualitative responses as participants were given the opportunity to elaborate on their rationales for their personal opinions regarding the ease of use, usefulness, and limitations of using ChatGPT. This approach aims to gather valuable insights into students' authentic perceptions, as they are not restricted to predefined response options.

Students' responses to the survey were automatically saved and transferred to an Excel file. Descriptive statistics were employed to analyse closed-ended questions, while thematic analysis was employed to analyse the open-ended questions. The thematic analysis followed Braun and Clarke's (2013) stages of coding and analysis, including transcribing, reading and becoming familiar with the data, coding according to the dataset, searching for themes, reviewing, defining, and naming themes. The open-ended questions which are thematically analysed are important for triangulating data with the survey results.

Instruments

Table 1 presents the closed-ended and open-ended questions used to collect data. Closed-ended survey questions (1-4) addressed the participants' demographics and familiarity with ChatGPT. Open-ended questions (5-7) delve into students' personal perspectives regarding ChatGPT's ease of use, usefulness, and limitations.

Table 1: Survey Questions on Participant Demographics and Perceptions of ChatGPT

Topic	Questions
Demographic data	Q1. Which of the following represents your gender?

Topic	Questions
	• Male
	• Female
	Q2. Which of the following represents your study programme?
	• IT-A (Pseudonym)
	• IT-B (Pseudonym)
Familiarity with ChatGPT	Q3. When did you begin using ChatGPT?
	• By the end of 2022
	• In the early 2023
	• Mid 2023
	• By the end of 2023
	Q4. How did you learn about ChatGPT?
	• Online search engine
	• Social media
	• Word of mouth
	• Online article or blog
	• Other
Agreement or disagreement with ChatGPT's ease of use, usefulness, and limitations	Q5. Did you find ChatGPT easy to use? Why or why not?
	Q6. Did you find ChatGPT useful to write your English essay? In what ways?
	Q7. Did you find any limitations of ChatGPT while using it to write your English essay? What are they?

Findings and Discussion

Quantitative Findings

Students' Demographic Data and Early Use of ChatGPT

Students' demographic data and early use of ChatGPT, including when they started using ChatGPT and how they first learned about it, are described below. The following figures provide information about the participants' demographic data, including their gender and study program.
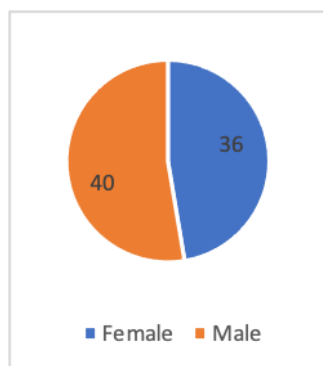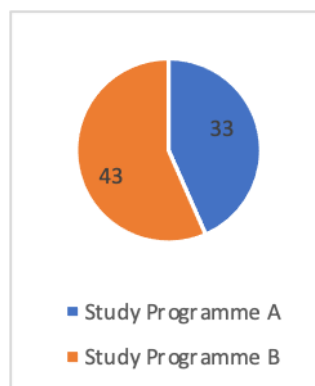

Figure 2. Gender Distribution

Figure 3. Study Programme Distribution

Participation based on gender was reasonably balanced, with only a slight difference in the number of male and female participants, accounting for 52.63% and 47.37%, respectively, as shown in Figure 2. Similarly, participation based on the study program was also balanced, with 43.42% of students majoring in IT-A and 56.58% majoring in IT-B, as shown in Figure 3.

Next, the following table illustrates the timeline of when students began using ChatGPT.

Table 2. Timeline of ChatGPT Adoption among Students

Timeline of ChatGPT Adoption	Number of Students
By the end of 2022	16 (21%)
In the early 2023	11 (14.5%)

Timeline of ChatGPT Adoption	Number of Students
Mid 2023	37 (48.7%)
By the end of 2023	12 (15.8%)

The responses revealed a diverse pattern of adoption over time. The majority of respondents, approximately 49%, reported starting to use ChatGPT during mid-2023, indicating a significant adoption of the tool during this period. The data suggests a trend of increasing familiarity and utilization of ChatGPT among students as they progressed through their academic year. Around 21% of respondents indicated that they began using ChatGPT by the end of 2022, showing an early uptake of the tool. Meanwhile, approximately 15% of respondents reported starting to use ChatGPT by the end of 2023, indicating ongoing adoption even into the latter part of the academic year. Interestingly, only about 14% of respondents reported starting to use ChatGPT in the early months of 2023, suggesting a relatively lower level of adoption during this period compared to mid-2023. Overall, the findings indicate a varied timeline of adoption for ChatGPT among students, with a notable surge in usage during mid-2023, followed by steady adoption in earlier and later periods.

Finally, the following table illustrates the primary sources through which students learned about ChatGPT.

Table 3. Primary Sources of Learning about ChatGPT

How Students Learn about ChatGPT	Number of Students
Online search engine	10 (13.20%)
Social media	29 (38.20%)
Word of mouth	35 (46%)
Online article or blog	2 (2.60%)

A significant portion of respondents, about 46%, indicated that they learned about ChatGPT through word of mouth, suggesting that personal recommendations or discussions played a crucial role in

spreading awareness about the tool. Social media also played a prominent role, with approximately 38% of respondents stating that they learned about ChatGPT through this platform. The data highlights the influence of social media in disseminating information about new technologies. Approximately 13% of respondents reported learning about ChatGPT through online search engines, indicating that some participants actively sought out information about the tool. The data suggests that the primary channels for discovering the tool were word of mouth, social media, and online search engines.

Students' Perceived Ease of Use of ChatGPT

The following table presents data on students' perceived ease of use of ChatGPT, including the mean and standard deviation.

Table 4. Students' Perceived Ease of Use of ChatGPT

Perceived Ease of Use	Mean	Standard Deviation
I find the ChatGPT cumbersome to use.	2.69	1.06
Learning to operate the ChatGPT is easy for me.	3.78	0.98
Interacting with the ChatGPT is often frustrating.	2.48	0.86
I find it easy to get the ChatGPT to do what I want it to do.	3.41	0.81
The ChatGPT is rigid and inflexible to interact with.	2.72	1.02
It is easy for me to remember how to perform tasks using the ChatGPT.	3.13	0.78
My interaction with the ChatGPT is clear and understandable.	3.35	0.80
I find it takes a lot of effort to become skilful at using ChatGPT.	2.44	0.95

The data presented provides insights into students' perceptions regarding the ease of use of ChatGPT. The responses vary across different aspects, reflecting both positive and negative experiences with the tool. Students generally do not find ChatGPT cumbersome to use, as indicated by a mean score of 2.69. However, the standard deviation of 1.06 suggests a wide range of opinions on this aspect, indicating that some students may find it more challenging to use than others. When it comes to learning to operate ChatGPT, students expressed strong agreement that it is easy for them, with a high mean score of 3.78. The standard deviation of 0.98 shows some variability in responses, but overall, students find the learning process straightforward. Interacting with ChatGPT is not often frustrating for most students, as evidenced by a low mean score of 2.48. The standard deviation of 0.86 indicates relatively consistent experiences among students, suggesting that frustrations with the tool are not expected. Students find it relatively easy to get ChatGPT to do what they want, with a mean score of 3.41. The standard deviation of 0.81 points to consistent responses, indicating that most students are able to use the tool for their intended purposes effectively.

The perception of ChatGPT being rigid and inflexible is moderately low, with a mean score of 2.72. The standard deviation of 1.02 indicates some variability in responses, suggesting that while some students find the tool rigid, others do not share this view. Remembering how to perform tasks using ChatGPT is relatively easy for students, as reflected by a mean score of 3.13. The standard deviation of 0.78 shows that responses are relatively consistent, indicating that students generally find it easy to recall how to use the tool. Students also find their interactions with ChatGPT to be clear and understandable, with a mean score of 3.35. The standard deviation of 0.80 suggests a consensus among students on this aspect. Finally, students only find it takes a little effort to become skilful at using ChatGPT, with a mean score of 2.44. The standard deviation of 0.95 indicates some variability, but overall, students do not perceive a high level of difficulty in becoming proficient with the tool. In summary, the data suggests that students generally find ChatGPT easy to learn and use, with clear and understandable interactions. While there is some variability in perceptions of rigidity and effort required to become skilful, most students find the tool simple and easy to use.

Students' Perceived Usefulness of ChatGPT

The following table displays data on students' perceived usefulness of ChatGPT, presenting the mean and standard deviation.

Table 5. Students' Perceived Usefulness of ChatGPT

Perceived usefulness	Mean	Standard Deviation
Using ChatGPT improves the quality of the essay I write.	3.19	0.68
Using ChatGPT gives me greater control over my essay.	3.17	0.77
ChatGPT enables me to accomplish the writing task more quickly.	3.37	0.96
Using ChatGPT increases my productivity in writing essays.	3.09	0.73
Using ChatGPT improves my writing performance.	3.22	0.86
Using ChatGPT allows me to accomplish more writing tasks than would otherwise be possible.	3.28	0.94
Using ChatGPT enhances my effectiveness in writing the essay.	3.20	0.71
Using ChatGPT makes it easier to write an essay.	3.44	0.79

The data provides a comprehensive overview of student perceptions regarding the use of ChatGPT in enhancing various aspects of essay writing. On average, students moderately agree that using ChatGPT improves the quality of their essays, with a mean score of 3.19. This sentiment is supported by a relatively low standard deviation of 0.68, indicating consistent responses among the students. In terms of control over their essays, students also express moderate agreement that ChatGPT provides them with greater control, reflected in a mean

score of 3.17. However, the standard deviation of 0.77 suggests slightly more variability in their opinions compared to the perceived improvement in essay quality. Students find that ChatGPT enables them to accomplish writing tasks more quickly, with a mean score of 3.37, the highest among all the statements. Despite this high mean, the standard deviation of 0.96 indicates that responses varied more widely for this aspect, suggesting diverse experiences with the tool's efficiency benefits.

Regarding productivity, students generally agree that ChatGPT increases their productivity in writing essays, with a mean of 3.09. The standard deviation of 0.73 shows that their responses are relatively consistent. Similarly, they believe that ChatGPT improves their writing performance, as indicated by a mean of 3.22 and a standard deviation of 0.86, reflecting moderate agreement with some variability in their experiences. Students also agree that ChatGPT allows them to accomplish more writing tasks than would otherwise be possible, as seen in the mean score of 3.28. This statement, like the one about task completion speed, has a higher standard deviation of 0.94, indicating a range of opinions on this benefit. When considering the effectiveness of their writing, students feel that ChatGPT enhances their performance, with a mean score of 3.20 and a low standard deviation of 0.71, showing consistent agreement. Finally, students strongly agree that ChatGPT makes it easier to write essays, as evidenced by the mean of 3.44. The standard deviation of 0.79 suggests moderate variability in responses, but overall, students perceive significant ease in using ChatGPT for essay writing. Overall, the findings indicate that students perceive ChatGPT as a valuable tool that improves various aspects of their essay writing process, with moderate to high agreement across different areas and relatively consistent responses.

Qualitative Findings

Students' Perceived Ease of Use of ChatGPT in Assisting with English Essay Writing

Thematic analysis of the open-ended questions regarding students' perceptions of the ease of using ChatGPT resulted in three themes. These themes include require no special skill, simple prompt writing and quick response.

Require no Special Skill

Students were unanimous in their praise for the ChatGPT platform, noting its simplicity and ease of use. One student remarked, "*It's so simple, anyone can use it*" (Student 20). Another student shared, "*Using ChatGPT is a breeze; just type your query and the answers appear. No special skills needed—it's just like a Google search*" (Student 30). A third student appreciated the straightforward access, saying, "*No complex procedures, just create a personal account*" (Student 5).

Simple Prompt Writing

Regarding Simple Prompt Writing, students with positive experiences using ChatGPT noted its ability to understand and respond to their prompts effectively. Student 9 remarked, "*It's easy because ChatGPT understands my prompts and can answer any questions I ask.*" Another student confirmed, "*ChatGPT is easy to use because it is designed to understand human language. So, students like me can use ChatGPT as an assistant for our assignments*" (Student 45). Additionally, one student commented, "*ChatGPT can respond to my prompts like a human, maybe even better*" (Student 2). However, some students emphasized the importance of writing the "*right keywords*" (Student 48) to enable ChatGPT to provide relevant answers.

Quick Response

Regarding Quick Response, students acknowledged that ChatGPT provided rapid replies. None of the students disapproved of ChatGPT's ability to give immediate answers to their questions or prompts. One student mentioned, "*ChatGPT responded quickly with relevant suggestions to my prompts every time*" (Student 55). However, some others cautioned that scrutiny is important because ChatGPT occasionally did not provide the "*appropriate answers*" (Student 22) they were expecting. As a result, Student 30 emphasized, "*It is important to check the validity and relevance of the information given by ChatGPT,*" as some responses could be "*misleading*" (Student 60) or "*confusing*" (Student 65).

While the majority of students acknowledge the ease of using ChatGPT, a minority encountered challenges, particularly in selecting appropriate prompts. One student remarked, "*The ease or difficulty of using ChatGPT hinges on the prompts chosen. Incorrect prompts lead to irrelevant responses, diverging from our expectations*" (Student 27).

Students' Perceived Usefulness of ChatGPT in Assisting with English Essay Writing

Thematic analysis revealed four key themes pertaining to students' perceptions of ChatGPT's utility in essay composition: its capacity to provide relevant materials, check vocabulary and sentence structures, generate ideas, and facilitate translation from Indonesian to English.

Providing Relevant Materials

Students expressed that ChatGPT facilitated their access to pertinent information for writing their essays. One student remarked, "*ChatGPT aided me in accessing relevant resources and information to support my argument*" (Student 33). Additionally, students utilised ChatGPT to discover relevant topics, thereby enhancing their comprehension of their chosen essay subjects. Furthermore, students acknowledged ChatGPT's ability to provide relevant essay examples for learning purposes. These examples were often described as "*interesting*," "*inspiring*," and "*broadening … perspectives*" (Student 28).

Checking Vocabulary

Students credited ChatGPT with significantly improving their writing vocabulary, with various benefits reported. They utilised the tool to "*check inappropriate words*" within their contexts (Student 5). Others sought "*alternative terms*" to refine their text (Student 9) and "*learn new vocabulary*" (Student 63). Given their acknowledged limitations in English proficiency and vocabulary, the use of ChatGPT significantly improved the quality of the students' essay diction. When confronted with challenging words in their reading materials used as essay references, students turned to ChatGPT for clarification, ensuring a more profound understanding before incorporating them into their compositions.

Furthermore, some students confessed to employing ChatGPT for sentence paraphrasing, resulting in essays that were "*more succinct and comprehensible*" (Student 64). Although a minority, some students enlisted ChatGPT for essay proofreading, accepting its suggestions for enhancing vocabulary and overall essay quality. However, a few students noted that the sophisticated language suggested by ChatGPT

sometimes made it *"evident that the sentence originated from an AI source"* (Student 49).

Checking Sentence Structures

The majority of students were notably pleased with the tangible benefits of ChatGPT in enhancing the structure of their sentences. For instance, student 16 remarked, *"ChatGPT was instrumental in helping me create impeccable sentences,"* while Student 22 shared, *"ChatGPT significantly elevated the structure of my sentences, surpassing what I could achieve on my own."* Moreover, students with limited English proficiency found ChatGPT to be a game-changer in bridging their sentences, which they perceived as poorly constructed before ChatGPT's intervention. The prevalent issue of disjointed sentences was a common theme among these students. As a result, they found ChatGPT to be an invaluable tool in enhancing the coherence of their sentences, leading to *a "logical flow of argument and ideas"* (Student 65).

Generating Ideas

Students found ChatGPT to be a valuable resource for generating ideas, especially when faced with writer's block during essay composition. Many students utilised ChatGPT to brainstorm ideas, engage in dialogue, and explore various perspectives. Through students' various prompts, ChatGPT offered interesting topics, aiding students in refining their initial concepts. One student remarked, *"ChatGPT helped me get ideas to write my essay"* (Student 46). Another student noted regular consultations with ChatGPT, asking *"what is lacking in my essay?"* and *"What needs to be corrected"* (Student 25). With ChatGPT's assistance, students reported increased efficiency in completing their essays.

Translation from Indonesian into English

Students recognized the significant role of ChatGPT in their essay writing, particularly in translation. They often found themselves in a predicament when it came to finding the right words or dealing with unfamiliar vocabulary. Some students openly admitted, *"There are times when I know what I want to say, but I find it challenging to express it in proper English words"* (Student 15). This led to a pattern where students

would first compose their ideas in Indonesian and then rely on ChatGPT to translate them into English.

Students perceived limitations of ChatGPT in assisting with English essay writing

Through a comprehensive analysis of the data from the open-ended questions that probed into students' perceptions of the limitations of ChatGPT in supporting them with their essays, three distinct themes were uncovered. The themes are irrelevant responses, unclear answers, and limitation in understanding complex instructions.

Irrelevant Responses

Many students who have encountered ChatGPT's limitations said that it often yields responses that stray from their intended queries. Students have expressed sentiments such as, "*The responses aren't aligned with what I anticipated*" (Student 10), "*They don't correlate with the essay I'm composing*" (Student 14), "*The answers diverge from the topics under discussion*" (Student 52), and "*They fail to address my specific questions*" (Student 24).

Some students attribute this limitation to ChatGPT's inability to grasp complex contexts and provide the latest information. Conversely, others speculate that ChatGPT's tendency to offer irrelevant responses stems from its reliance on patterns within the dataset it was trained on. Consequently, "*it often generates repetitive or generic suggestions*" (Student 64). One student noted, "*A drawback of ChatGPT is its reliance on data up to 2021, as far as I recall. However, the sources I require are more current, which ChatGPT cannot provide*" (Student 70).

Unclear Answers

Students raised concerns that ChatGPT's responses could sometimes be confusing. They reported that ChatGPT occasionally provided answers that were "*incorrect*" (Student 74), "*incomplete*" (Student 27), "*difficult to understand*" (Student 29), "*nonsensical, even absolutely wrong*" (Student 42), and "*inaccurate, causing misunderstanding*" (Student 65). Therefore, the students admitted that they did not always adopt ChatGPT's responses immediately. Instead, they carefully reviewed the responses to ensure their accuracy in relation to their queries.

Limitation in Understanding Complex Instructions

Students claimed that ChatGPT sometimes provided irrelevant or unclear answers due to its limitations in understanding complex instructions. Some noted that when they used long sentences, ChatGPT might not grasp the essence of their questions, finding their prompts too complex. This issue was particularly mentioned by students with limited English skills, who often struggled to find the right words as prompts. Additionally, some students observed that the quality of ChatGPT's responses depended on the clarity of their prompts. As a result, when faced with unexpected answers, some students revised their prompts multiple times to make them as simple and straightforward as possible. One student remarked, "*I must change my prompts many times to get better answers that meet my expectations*" (Student 41).

Discussion

The findings showing that students began using ChatGPT around the end of 2022 corresponds with the introduction of the tool around the same time (Sabzalieva & Valentini, 2023). The increased adoption of ChatGPT by more students in mid-2023 suggests that awareness of its utility likely grew not long after its initial release, supported by UNESCO's assertion that ChatGPT had amassed 100 million users within two months of its launch. The primary factor driving this popularity is likely the ubiquitous nature of the Internet, compounded by the surge in online activity prompted by the COVID-19 pandemic, which necessitated the transition to online learning platforms due to campus closures. Therefore, the results suggest that word of mouth, social media, and online search engines served as significant avenues through which students discovered advanced technological tools for learning, such as ChatGPT. The development of technology is important to support students' learning needs, and students can easily access various digital technology applications due to their increased use of and exposure to social media, as well as the availability of the Internet at the click of a button.

Students described ChatGPT as straightforward. It's user-friendly because interacting with the ChatGPT application is similar to using any messaging app like WhatsApp. Users simply type their prompts into the 'Send a message' field, and responses instantly appear on the screen

(Sabzalieva & Valentini, 2023). Chatting with ChatGPT feels like conversing with a human, as it is designed to "generate coherent and compelling human-like output in response to a question or statement" (Sabzalieva & Valentini, 2023, p. 5). When an AI tool like ChatGPT is ubiquitous and user-friendly, students might rely on it for answers to their schoolwork or assignments (Mahama et al., 2023; Mahapatra, 2024; Marzuki et al., 2023; Shakil & Siddiq, 2024; Thao et al., 2023). While this could enhance their learning beyond the classroom, it also poses a risk to the development of their critical thinking. Moreover, no evidence has been found to suggest that students could enhance their skills in writing arguments (Marzuki et al., 2023; Rahim et al., 2023), self-editing (Özçelik & Ekşi, 2024) after using ChatGPT's assistance in their writing assignment.

Students may simply accept the answers generated by ChatGPT without questioning them, potentially demotivating them from engaging in the authentic learning process that involves reading, analysing, questioning, and ultimately achieving a deep understanding. No matter how easy ChatGPT is to use, several studies (Cornish & Larter, 2024; Mahama et al., 2023; Mahapatra, 2024; Marzuki et al., 2023; Shakil & Siddiq, 2024; Thao et al., 2023) have warned that it could lead to student dependency on the tool and pose a threat to their creative and critical thinking skills. In the long run, as students increasingly rely on AI tools like ChatGPT for quick solutions, they may risk at least three significant consequences: failing to develop their learning capabilities, losing problem-solving skills, and losing confidence in their own intellectual abilities when making decisions. These three factors are deeply interconnected, each contributing to a broader decline in cognitive and academic development.

First, the reliance on AI tools may impede the development of students' learning capabilities within their Zone of Proximal Development (ZPD). Vygotsky's ZPD theory suggests that students learn most effectively when they are challenged just beyond their current abilities, with support (or scaffolding) that helps them reach the next level of competence (Vygotsky, 1986). However, when students turn to AI tools for answers without engaging in the cognitive process themselves, they bypass this critical phase of learning. Instead of grappling with difficult problems and advancing through guided struggle, they become dependent on external solutions that do not

foster intellectual growth. As a result, they are less likely to develop the deep understanding and skills that are key to their long-term academic and cognitive development. Meanwhile, facing struggles or crises and learning to navigate them is essential for a learner's growth within their Zone of Proximal Development (Silalahi, 2019).

Second, over-reliance on AI for answers can lead to a decline in problem-solving skills (George & Srikaanth, 2024; Zhai et al., 2024). Over time, as argued by George and Srikaanth (2024) and Zhai et al.(2024), their ability to approach problems independently diminishes, as they become accustomed to relying on an external source for answers. This can be particularly detrimental in real-world scenarios, where problems are often nuanced and require the application of creative, flexible thinking. Without the development of robust problem-solving strategies, students may struggle to tackle unfamiliar or complex challenges, which can hinder their success both in academic settings and in professional environments.

Finally, a sustained dependency on AI tools can erode students' confidence in their own intellectual capacities, particularly to make decision (Zhai et al., 2024). As students increasingly rely on external tools to provide them with answers, they may begin to doubt their own ability to think critically or solve problems independently. This loss of self-efficacy can be especially damaging, as confidence in one's abilities is a critical driver of motivation and persistence. When students are not given the chance to see the results of their own thinking and effort, they may begin to internalize the belief that they are not capable of succeeding without technological assistance. This diminished self-confidence can create a cycle where students become more reliant on AI tools, further eroding their belief in their intellectual capabilities, and potentially affecting their performance in future learning endeavors.

If students develop a tendency to rely on discussing their assignments with a machine, such as ChatGPT, rather than engaging in conversations with a human friend or peer, it could have detrimental effects on their social well-being (Brandtzaeg et al., 2023; Rad & Rad, 2023). Human interactions are essential not only for academic growth but also for the development of emotional intelligence, empathy, and effective communication skills. These interpersonal relationships provide opportunities for students to share ideas, receive feedback, and build trust—elements that are crucial for developing a sense of

belonging and self-worth within a community. By substituting these interactions with a machine, students may miss out on the valuable social exchanges that foster emotional support, collaboration, and connection with others (Brandtzaeg et al., 2023; Rad & Rad, 2023).

Moreover, social connections with peers and mentors play a vital role in maintaining good mental health, particularly during stressful academic periods. Conversations with friends help students process their thoughts, relieve stress, and feel supported during challenges. If students become increasingly isolated by relying on AI tools for academic discussion, they may experience feelings of loneliness or disconnection, which can lead to anxiety and depression. The lack of human interaction could also hinder their ability to develop key social skills, such as reading emotional cues, negotiating perspectives, and resolving conflicts—all of which are important for forming healthy, long-lasting relationships (Brandtzaeg et al., 2023; Rad & Rad, 2023).

Additionally, engaging with peers in academic discussions allows students to practice articulating their ideas, defending their viewpoints, and collaborating on problem-solving, all within a social context. These exchanges contribute to the development of a robust social identity and a sense of community that is vital for emotional well-being. Without these interpersonal engagements, students may struggle to develop the social competence necessary for future personal and professional relationships (Cherfaoui, 2024; Khurma et al., 2024). The more students turn to machines for academic support, the less they may invest in these essential social connections, jeopardizing both their academic growth and their mental health in the process (Cherfaoui, 2024; Khurma et al., 2024). Therefore, while AI tools can offer valuable assistance, it is crucial that students maintain and prioritize their human relationships for a balanced, healthy development.

The findings indicate that ChatGPT can answer a wide range of questions, including those involving opinions, data, and analysis, though there are cautions regarding the complexities and validity of its responses. This is consistent with previous studies, which found that ChatGPT's responses can be confusing due to language complexities (Özçelik & Ekşi, 2024), repetitive and monotonous answers (Nugroho et al., 2023), and a lack of accuracy and reliability (Eunim & Youngsang, 2023; Imran & Lashari, 2023; Mahama et al., 2023; Nugroho et al., 2023, 2024; Thao et al., 2023). Therefore, in their study, Sabzalieva and

Valentini (2023, p. 6) recommends that users give ChatGPT specific prompts on how they want it to respond, such as providing exact instructions like "work in 50 words," "act as a higher education manager," or "write a four-paragraph essay about [add query]".

ChatGPT-3.5 is capable of answering nearly any question with advanced writing ability because it has been trained on 570GB of data, representing 300 billion words, which it analyses statistically to generate responses (Sabzalieva & Valentini, 2023). However, the prominent limitation of ChatGPT is that it only has access to data up to 2021 and cannot assess the reliability of the information it provides (Sabzalieva & Valentini, 2023). This constraint is particularly significant in fields that require up-to-date knowledge, such as medicine, technology, finance, and current events. In these areas, new research findings, innovations, and shifts in industry standards occur frequently, meaning that relying on outdated information could lead to misinformation or poor decision-making (Alawida et al., 2023). For instance, in the medical field, where research is continually evolving, using outdated guidelines or treatments suggested by an AI tool could result in ineffective or even harmful advice (Guan, 2020; Zhang & Zhang, 2023). Similarly, in technology and finance, where rapid advancements shape best practices and investment strategies, reliance on past data could cause individuals or organizations to miss out on emerging trends or make outdated recommendations (Giray et al., 2024; Haque & Li, 2024).

Furthermore, the inability of ChatGPT to assess the reliability of its own data compounds the problem. While it may present factual-sounding information, it cannot discern whether the information is still relevant or accurate in the current context (Giray et al., 2024; Haque & Li, 2024). As a result, users may unknowingly rely on incorrect or obsolete data, potentially leading to incorrect conclusions, flawed analyses, or misguided actions (Giray et al., 2024; Haque & Li, 2024). In academic and professional settings, this is especially problematic, as students or professionals may inadvertently build arguments, strategies, or solutions on information that no longer holds true or has been discredited.

The consequences of this limitation are not just limited to academic work or casual inquiries; they have real-world implications for industries where staying informed is critical to success. In fields like law or public policy, where changes in legislation or regulations can have

immediate and far-reaching effects, outdated information could lead to costly errors, legal challenges, or reputational damage (Perlman, 2024). Therefore, while AI tools like ChatGPT can be useful for general knowledge, their inability to provide real-time, reliable data makes them unsuitable as sole sources of information in fields where accuracy and currency are paramount.

Furthermore, ChatGPT cannot aid people in providing data safely; instead, it poses a threat to personal data (Bahrini et al., 2023). Once someone's data is published online, it may remain accessible indefinitely and be available to others who seek such information. Therefore, people should be mindful of the data they upload to the Internet, as it can remain online permanently.

The findings indicate that students' significant challenges in writing essays stem from their limited English proficiency. Therefore, they found ChatGPT extremely helpful for generating ideas, checking vocabulary and sentence structure, paraphrasing, and translating sentences from Indonesian to English. Additionally, ChatGPT proved helpful in providing references and resources for their essays. This finding is consistent with previous studies on the perceived usefulness of ChatGPT among non-native English-speaking students (Črček & Patekar, 2023; Eunim & Youngsang, 2023; Ge, 2024; Harunasari, 2023; Jarrah et al., 2023; Mahapatra, 2024; Marzuki et al., 2023; Nugroho et al., 2023, 2024; Thao et al., 2023; Xu et al., 2024). However, while ChatGPT may offer immediate assistance, there is a concern that such reliance on ChatGPT could hinder students from fully mastering their language skills in the long term.

By consistently using ChatGPT for tasks like vocabulary checks and sentence structure corrections, students may bypass the cognitive effort needed to actively engage with the language and improve their skills independently. This dependency could negatively impact students' intrinsic learning, compromising their ability to achieve a deeper understanding (Sweller, 2020). Language acquisition, especially in writing, involves more than simply producing grammatically correct sentences—it requires practice in constructing thoughts, experimenting with new vocabulary, and internalizing grammatical rules. When students rely too heavily on an AI tool to do these tasks for them, they may miss out on valuable opportunities to learn and practice language skills through trial and error (Lin et al., 2024).

Using ChatGPT for paraphrasing and translation may prevent students from developing key language skills, such as rephrasing in their own words or understanding the nuances of translating meaning accurately. While ChatGPT offers quick solutions, it may fail to capture essential subtleties such as context, tone, or word choice—critical components for mastering a language. This reliance can potentially impair students' critical thinking skills, limiting their ability to process and apply language creatively and effectively in real-world societal interactions (Han, 2024). Although tools like ChatGPT provide valuable support for non-native English speakers, especially in improving writing, students must still engage with original sources to truly understand the topics they study. Solely relying on ChatGPT for information can lead to a shallow understanding of a topic and may prevent students from critically evaluating the accuracy and truthfulness of the content(Dans, 2023).

The emergence of tools like ChatGPT has indeed provided significant support to non-native English speakers, particularly students, in improving their writing skills. However, students still need to learn from original sources about the topics they study. If students only rely on ChatGPT for information, they will have very limited knowledge about the topic and may not be able to discern the truthfulness of the responses.

With ChatGPT, students can access instant help and guidance to craft well-written and professional-looking essays. However, there's a concern about the authenticity of the work produced with the assistance of AI. While students may submit perfectly written essays, there's a risk that these may not accurately reflect their true English proficiency or understanding of the subject matter. This dilemma highlights the importance of integrity and academic honesty (Jarrah et al., 2023; Mahama et al., 2023; Nugroho et al., 2023, 2024; Thao et al., 2023). Therefore, it's essential to encourage students to use AI tools like ChatGPT as aids rather than replacements for their own efforts. Implementing measures such as plagiarism checks and incorporating more interactive and personalised learning experiences can help ensure that students' language skills are genuinely developed.

Conclusions and Suggestions

The study highlights ChatGPT's substantial assistance to non-native English-speaking students in completing essay assignments due to its user-friendliness and utility. The thematic analysis findings validate those of the descriptive analysis regarding the survey, thus achieving data triangulation. In addressing Research Question 1, students perceive ChatGPT as an easy-to-use application for three primary reasons: its straightforward instructions which require no specific technological skills, simple prompts, and its ability to provide immediate answers. Concerning Research Question 2, students generally agree that ChatGPT aids them in various ways, such as finding references, checking vocabularies and sentence structures, generating ideas, and translating sentences into English. However, in addressing Research Question 3, students recognize that despite its benefits, ChatGPT may provide irrelevant or unclear responses due to its difficulty in processing complex prompts or questions and its limited data retrieval capability, bounded by its knowledge base up to 2021. Consequently, students acknowledge the necessity for precautions, primarily due to ChatGPT's limitations in understanding complex prompts and its restricted access to up-to-date information.

When ChatGPT is utilised to assist students in essay writing, precautions should be taken to mitigate its limitations and ensure it is not underestimated. Critical thinking should always accompany students' use of ChatGPT as an assistant. This approach safeguards academic integrity and helps students avoid ethical dilemmas such as plagiarism. However, though students' generally positive attitudes towards ChatGPT suggest potential intentions to adopt it for future essay assignments, this research did not collect data to confirm such intentions.

References

Alawida, M., Mejri, S., Mehmood, A., Chikhaoui, B., & Abiodun, O. I. (2023). A comprehensive study of ChatGPT: Advancements, limitations, and ethical considerations in natural language processing and cybersecurity. *Information, 14*(462), 1–23. https://doi.org/10.3390/info14080462

Athanassopoulos, S., Manoli, P., Gouvi, M., & Lavidas, K. (2023). The use of ChatGPT as a learning tool to improve foreign language writing in a multilingual and multicultural classroom. *Advances in Mobile Learning Educational Research, 3*(2), 818–824. https://doi.org/10.25082/AMLER.2023.02.009

Bahrini, A., Khamoshifar, M., Abbasimehr, H., Riggs, R. J., Esmaeili, M., Majdabadkohne, R. M., & Pasehvar, M. (2023). ChatGPT: Applications, opportunities , and threats. *Systems and Information Engineering Design Symposium (SIEDS),* 274–279. https://doi.org/10.1109/SIEDS58326.2023.10137850

Bašić, Ž., Banovac, A., Kružić, I., & Jerković, I. (2023). ChatGPT-3.5 as writing assistance in students' essays. *Humanities and Social Sciences Communications, 10*(750), 1–5. https://doi.org/10.1057/s41599-023-02269-7

Brandtzaeg, P. B., You, Y., Wang, X., & Lao, Y. (2023). "Good" and "bad" machine agency in the context of human-AI communication: The case of ChatGPT. *International Conference on Human-Computer Interaction*, 3–23. https://doi.org/10.13140/RG.2.2.26200.26882

Braun, V., & Clarke, V. (2013). Successful qualitative research: A practical guide for beginners. SAGE Publications Ltd.

Cherfaoui, S. (2024). ChatGPT's effects on students' academic performance and social human interactions. *Algerian Scientific Journal Platform, 9*(2), 41–53. https://asjp.cerist.dz/en/article/245090

Cornish, D., & Larter, Z. (2024). "I don't have to write an essay ever again!": University student reflections on ChatGPT in the classroom. *Journal of Education Technology Systems, 52*(3), 325–334. https://doi.org/10.1177/00472395231219267

Črček, N., & Patekar, J. (2023). Writing with AI: University students' use of ChatGPT. *Journal of Language and Education, 9*(4), 128–138. http://dx.doi.org/10.17323/jle.2023.17379

Davis, F. D. (1993). User acceptance of information technology: System characteristics, user perceptions and behavioral impacts. *International Journal of Man-Machine Studies, 38*(3), 475–487. https://doi.org/10.1006/imms.1993.1022

Davis, F. D., & Venkatesh, V. (1996). A critical assessment of potential measurement biases in the technology acceptance model: Three experiments. *International Journal of Human-Computer Science, 45*(1), 19–45. https://doi.org/10.1006/ijhc.1996.0040

Eunim, B., & Youngsang, C. (2023). Examining Korean EFL college students' experiences and perceptions of using ChatGPT as a writing revision tool. *Journal of English Teaching through Movies and Media, 24*(4), 15–27. https://doi.org/10.16875/stem.2023.24.4.15

Ge, T. (2024). Assessing the acceptance and utilization of ChatGPT by Chinese university students in English writing education. *International Journal of Learning and Teaching, 10*(1), 166–170. https://doi.org/10.18178/ijlt.

George, A. S., & Srikaanth, P. B. (2024). The erosion of cognitive skills in the technological age: How reliance on technology impacts critical thinking, problem-solving, and creativity. *Partners Universal Innovative Research Publication (PUIRP), 2*(3), 147–163. https://doi.org/10.5281/zenodo.11671150

Giray, L., Jacob, J., Strengths, D. L., & Gumalin, D. L. (2024). Threats of using ChatGPT in scientific to cite this article: Strengths, weaknesses, opportunities, and threats of using ChatGPT in scientific research. *International Journal of Technology in Education, 7*(1). 40-58. https://doi.org/10.46328/ijte.618

Granić, A., & Marangunić, N. (2019). Technology acceptance model in educational context: A systematic literature review. *British Journal of Educational Technology, 50*(5), 2572–2593. https://doi.org/10.1111/bjet.12864

Guan, J. (2020). Artificial intelligence in healthcare and medicine:

Promises, ethical challenges and governance. *Chinese Medical Sciences Journal, 34*(2), 76–83. https://doi.org/10.24920/003611

Haque, A., & Li, S. (2024). Exploring ChatGPT and its impact on society. *AI and Ethics*, 1–13. https://doi.org/10.1007/s43681-024-00435-4

Harunasari, S. Y. (2023). Examining the effectiveness of AI-integrated approach in EFL writing: A case of ChatGPT. *International Journal of Progressive Sciences and Technologies (IJPSAT), 39*(2), 357–368. https://doi.org/10.52155/ijpsat.v39.2.5516

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 (GSSR), 8*(1), 375–384. http://dx.doi.org/10.31703/gssr.2023(VIII-I).34

Jarrah, A. M., Wardat, Y., & Fidaigo, P. (2023). Using ChatGPT in academic writing is (not) a form of plagiarism: What does the literature say? *Online Journal of Communication and Media Technologies, 13*(4). 1-20. https://doi.org/10.30935/ojcmt/13572

Khurma, O. A., Albahti, F., Ali, N., & Bustanji, A. (2024). AI ChatGPT and student engagement: Unraveling dimensions through PRISMA analysis for enhanced learning experiences. *Contemporary Educational Technology, 16*(2), 1–22. https://doi.org/10.30935/cedtech/14334

Mahama, I., Baidoo-anu, D., Eshun, P., Ayimbire, B., & Eggley, V. E. (2023). ChatGPT in academic writing: A threat to human creativity and academic integrity? An exploratory study. *Indonesian Journal of Innovation and Applied Sciences (IJIAS), 3*(3), 228–239. https://doi.org/10.47540/ijias.v3i3.1005

Mahapatra, S. (2024). Impact of ChatGPT on ESL students' academic writing skills: A mixed methods intervention study. *Smart Learning Environments, 11*(9), 1–18. https://doi.org/10.1186/s40561-024-00295-9

Marzuki, Widiati, U., Rusdin, D., Indrawati, I., & Indrawati, D. (2023). The impact of AI writing tools on the content and organization of students' writing: EFL teachers' perspective. *Cogent Education, 10*(2), 1–17. https://doi.org/10.1080/2331186X.2023.2236469

Nugroho, A., Andriyanti, E., Widodo, P., & Mutiaraningrum, I. (2024). Students' appraisals post-ChatGPT use: Students' narrative after using ChatGPT for writing. *Innovations in Education and Teaching International*, 1–13. https://doi.org/10.1080/14703297.2024.2319184

Nugroho, A., Putro, N. H. P., & Syamsi, K. (2023). The potentials of ChatGPT for language learning: Unpacking its benefits and limitations. *Register Journal, 16*(02), 224–247. https://doi.org/10.18326/rgt.v16i2.224-247

Özçelik, N. P., & Ekşi, G. Y. (2024). Cultivating writing skills: The role of ChatGPT as a learning assistant — a case study. *Smart Learning Environments, 11*(10), 1–18. https://doi.org/10.1186/s40561-024-00296-8

Perlman, A. (2024). The implications of ChatGPT for legal services and society. *Michigan Technology Law Review, 30*(1), 1–24. https://doi.org/10.36645/mtlr.30.1.implications

Punch, K. F. (2014). Introduction to social research: Quantitative & qualitative approaches (2nd ed.). SAGE Publications Ltd.

Rad, D., & Rad, G. (2023). Exploring the psychological implications of ChatGPT: A qualitative study. *Journal Plus Education, 32*(1), 43–55. http://dx.doi.org/10.24250/jpe/Vol.321/2023/DR/GR

Rahim, E. M. A., Rahim, M. E. A., Razawi, N. A., & Mohamed, N. A. (2023). Students' perception on the use of ChatGPT as a language learning tool. *Idealogy Journal, 8*(2), 70–78. http://dx.doi.org/10.24191/idealogy.v8i2.456

Rousseau, H. P. (2023). From Gutenberg to ChatGPT: The challenge of the digital university (No. 2023rb-02). Burgundy Reports 2023rb-02,

CIRANO. Retrieved from https://ideas.repec.org/p/cir/cirbur/2023rb-02.html

Sabzalieva, E., & Valentini, A. (2023). ChatGPT and artificial intelligence in higher education: Quick start guide. London: UNESCO.

Shaengchart, Y. (2023). A conceptual review of TAM and ChatGPT usage intentions among higher education students. *Advance Knowledge for Executives (AKE), 2*(3), 1–7. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4581231

Shakil, E., & Siddiq, D. S. (2024). ESL teachers' perceptions about ChatGPT as a threat to analytical writing abilities of ESL learners at graduate level. *Pakistan Languageas and Humanities Review, 8*(1), 115–128. http://dx.doi.org/10.47205/plhr.2024(8-I)10

Silalahi, R. M. (2019). Understanding Vygotsky's zone of proximal development for learning. *Polyglot, 15*(2), 169–186. https://doi.org/dx.doi.org/10.19166/pji.v15i2.1544

Thao, L. T., Hieu, H. H., & Thuy, P. T. (2023). Exploring the impacts of ChatGPT in EFL writing: Student perceptions of opportunities and challenges in Vietnamese higher education. *Kognisi: Jurnal Ilmu Keguruan, 1*(2), 107–124. https://shorturl.at/L94pb

Tracy, S. J. (2013). Qualitative research methods: Collecting evidence, crafting analysis, communicating Impact. John Wiley & Sons, Ltd.

Vygotsky, L. S. (1986). Thought and Language. MIT Press.

Wu, L. (2024). AI-based writing tools: Empowering students to achieve writing success. *Advances in educational technology and psychology, 8*(2), 40–44. https://doi.org/10.23977/aetp.2024.080206

Xu, X., Su, Y., Zhang, Y., Wu, Y., & Xu, X. (2024). Understanding learners' perceptions of ChatGPT: A thematic analysis of peer interviews among undergraduates and postgraduates in China. *Heliyon, 10* (4), 1–13. https://doi.org/10.1016/j.heliyon.2024.e26239

Zhai, C., Wibowo, S., & Li, L. D. (2024). The effects of over-reliance on AI dialogue systems on students' cognitive abilities: A systematic review. *Smart Learning Environments, 11*(28), 1–37. https://doi.org/10.1186/s40561-024-00316-7

Zhang, J., & Zhang, Z. (2023). Ethics and governance of trustworthy medical artificial intelligence. *BMC Medical Informatics and Decision Making, 23*(7), 1–15. https://doi.org/10.1186/s12911-023-02103-9