21st Century Language Teaching Conference 2024

Post Conference Proceedings

Editor in Chief

Anthony Brian Gallagher

Published March 2025

Independently Published through

Kindle Direct Publishing (KDP).

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University Students' Perceptions of Using ChatGPT for Academic Purposes

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Abstract

This paper presents the findings of a study conducted in 2023 investigating Japanese university students' perceptions of using ChatGPT for academic purposes. Eighty-two students taking the author's compulsory English courses participated. They discussed the advantages and disadvantages of using ChatGPT and the effective ways to use it for their studies. The outcome of the discussion was reported in group presentations, which were analysed quantitatively and qualitatively. Unsurprisingly, the time and effort-saving aspecst were the most prominent benefits, such as: information gathering, idea generation, and linguistic help. On the other hand, the potential inaccuracy of information was the drawback that emerged most frequently. The students were also aware of the risk of plagiarism and overreliance on the chatbot. A wide variety of suggestions were presented for using ChatGPT effectively, maximising its benefits and minimising its shortcomings. The most frequently proposed was to verify information by, for example, consulting other sources. Many other suggestions focused on how to prevent plagiarism and academic dishonesty. The discussion activities encouraged students to explore the AI tool for the first time, providing them with firsthand experience that helped them gain a better understanding of how the chatbot functions. It is believed that this study yielded more valid data than one-off survey studies common in past research, which may have elicited responses based solely on speculation or secondary information from the Internet.

要旨

本研究は、ChatGPTを学業に使用することに対する日本の大学生の意識を探る目的で、2023年に行われた。参加者は筆者の必修英語クラスを履修していた82人の学生で、ChatGPTを学業に使用する利点と欠点、および効果的な使用方法について議論し、結果をグループ・プレゼンテーションとして発表した。分析結果から、情報の迅速な収集やアイデア創出、語学上の支援など、時間や労力の削減という側面が利点として際立っている一方で、情報の正確性に対する疑問や剽窃・依存のリスクが懸念されていることが明らかになった。効果的な活用法についての提案で最も頻繁に見られたのは、他の情報源を参照するなどによって情報の正確さを確認するというものだった。また、剽窃や不正を避けるための提言も多くなされた。先行研究が主にアンケート調査に依存していたのに対し、本研究では数週間にわたるディスカッションを取り入れたことにより、学生が実際にChatGPTを使用した上で意見を交換する機会があり、より深い理解と実体験に基づくデータが得られたと考えられる。

Introduction

There has been a worldwide discussion about students' use of ChatGPT since it was made available to the public in November 2022. In addition to the anticipation for the potential educational benefits this tool may bring, serious concerns regarding students' unethical use of the chatbot have been expressed in various sectors (e.g., Kohnke et al., 2023). These concerns have led many higher-education institutions to issue announcements and guidelines. At the author's institution, a document entitled "Basic Approach to Generative AI Tools" was published in June 2023. The section for the students highlighted the risks of privacy leakage, plagiarism, potential inaccuracy of information, and over-reliance, and stressed the importance of following each teacher's policy. The section for the teachers emphasised the need to avoid over-reliance on imperfect plagiarism detection software and to develop fair assessment methods that align with the learning objectives and give due consideration to students with varied levels of IT skills and in diverse learning environments (e.g., available devices and Internet connection) (Center for Educational Development and Learning Support, Hosei University, 2023). These were broad guidelines, and details as to whether or to what extent the use of Generative AI could be accepted were left up to individual teachers.[1]

What is missing from these institutional efforts, however, is students' perspectives even though they are the primary agents of learning. A body of research on student perceptions about the use of ChatGPT is emerging (e.g., Dizon et al., 2024; Matsuda & Iida, 2024; Obari, 2024). However, apart from very few studies (e.g., Obari, 2024), previous research primarily relied on (typically one-off) survey data, potentially based on assumptions or second-hand information rather than genuine personal experience and reflection.

This pilot study aimed to investigate Japanese university students' perceptions of using ChatGPT for academic purposes in a way that reflects their own experience and thorough consideration. In order to achieve this, an ample opportunity was given to the students to explore the chatbot's potential as a study tool and discuss their perceptions and experiences with other students and the teacher-researcher. It is hoped that this study offers insights that will inform future teaching in an era where the influence of generative AI is unavoidable.

The following research questions are addressed:

What are Japanese university students' perceptions of using ChatGPT for academic purposes?

1. What do they identify as its advantages and disadvantages?

2. What do they propose to use it effectively, maximising the advantages and minimising the disadvantages?

Method

The participants were 82 students taking the author's compulsory English courses in 2023. All the participants gave informed consent with guaranteed anonymity. Five classes, with students from three faculties and nine departments, were involved. Three were advanced classes taught in English, and two were intermediate ones taught in Japanese. The table below shows a breakdown of the participants into their respective classes.

Table 1

Breakdown of Participants (N = 82)

Class (n)	1 (21)	2 (10)	3 (17)	4 (18)	5 (16)
Year	1	2	2	2	2
Level	Advanced	Advanced	Advanced	Intermediate	Intermediate
Faculty (Department)	Intercultural Communication	Law (Law, Politics), Letters (History, Geography, Psychology)	Law (Law, Politics)	Letters (Philosophy, Japanese Literature, English Literature)	Letters (History, Geography, Psychology)

At the beginning of the spring semester, the students were assigned homework which introduced them to the topic. They were asked to read a BBC news article (Wild, 2023) about the use of ChatGPT by Cardiff University students and to write answers to two relevant questions in English: 1. What do you think the pro/s and con/s of using ChatGPT for university studies are? 2. How can we maximise the pros and minimise the cons? The informal tone of the questions was used to suit the casual atmosphere of the lessons. In Week 2, the students were randomly assigned to groups of three to five, depending on the class size, and started discussion based on their homework. The discussion continued for five weeks, using 30 minutes to one hour of the 90-minute class time. In Week 7, the results of the discussion were presented in groups. A total of 22 presentations, each of which was allocated a maximum of 15 minutes, were given in the five classes.

Results
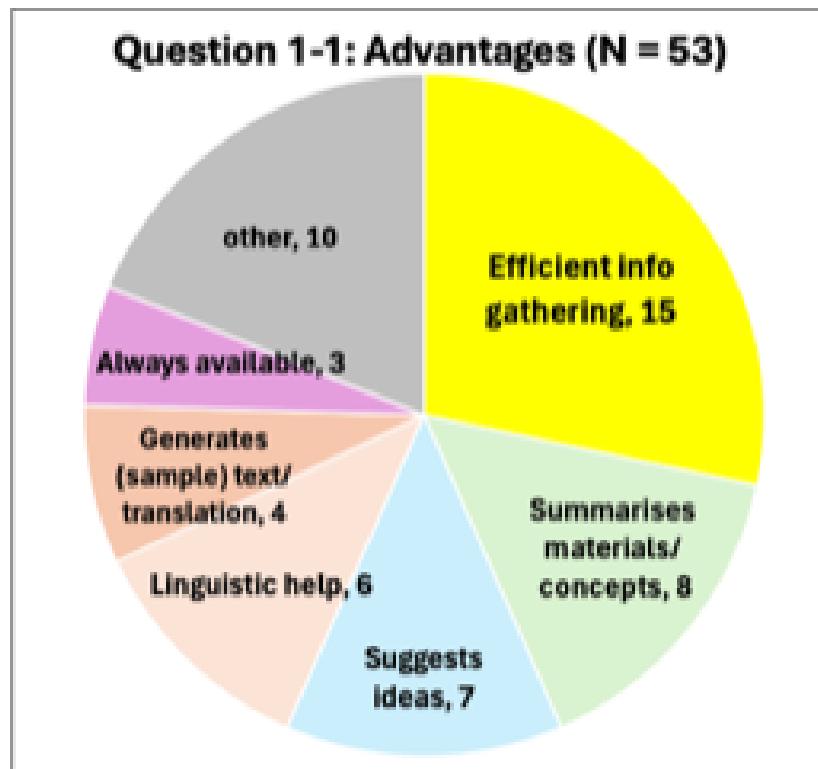
The results of the quantitative and qualitative analysis of the students' answers to the discussion questions, as they emerged from the presentations, are presented below. It should be noted that quotations from the students' works are not edited except for the added emphasis.

Advantages of using ChatGPT

Not surprisingly, the benefits presented were predominantly related to saving time and effort. The most frequently mentioned was the efficiency of information gathering. This was followed by the chatbot's ability to provide summaries of reading materials and concepts, which helped students to quickly and easily understand challenging materials and complicated concepts. Some groups also reported its usefulness for suggesting ideas for homework and offering linguistic help, such as correcting mistakes or suggesting more advanced or context-appropriate language. The generation of (sample) text or translation and 24/7 availability were also noted. Other less frequently mentioned advantages included timesaving in planning, grade improvement, and ChatGPT's human-like responses.

Figure 1

Advantages of Using ChatGPT for Academic Purposes

Question 1-1: Advantages (N = 53)

other, 10
Efficient info gathering, 15
Always available, 3
Generates (sample) text/ translation, 4
Summarises materials/ concepts, 8
Linguistic help, 6
Suggests ideas, 7

These quantitative results may be somewhat predictable. However, a qualitative analysis revealed deeper insights into students' attitudes towards "studies" and their perceptions of the nature of ChatGPT – views that may differ from teachers' expectations. There were remarks suggesting that achieving good grades or saving time on homework to create more free time – rather than acquiring more knowledge or skills – were their priorities.

> "When the students write a report, AI corrects mistakes. .... So, students [sic] grades will improve." (Class 1 Group 3)

> "... if students use ChatGPT effectively when they study, they may can [sic] reduce time [sic] of doing HW and make more free time." (Class 1 Group 1)

In addition, some comments revealed students' interpretation of what constitutes "support", which may be different from that of teachers.

> "Assist with reading / ChatGPT can provide summaries of books that we take time by [sic] finish reading. And, difficult sentence reword [sic] simple one." (Class 4 Group 1)

Class 4 consisted primarily of literature students, and this comment raises concerns about potential reliance on summaries provided by ChatGPT rather than studying original works. This group also believed that the chatbot was useful for creative activities, such as creative writing.

> "Creative support / ChatGPT can assist in creative activities. It can generate text, offer ideas for stories [with] various creative elements." (Class 4 Group 1)

This finding is significant, as it has often been suggested that assignments requiring creativity are likely to deter students from relying on ChatGPT. The result suggests that this assumption may not always hold true. Interestingly, one group believed that ChatGPT possessed "thoughts".

> ...We can get thoughts and impressions of novels and movies from ChatGPT. And, we can see things from different perspective [sic] by using it. Therefore we can deepen our understanding of novels and movies. .... *These thoughts and impressions should only be used as a reference and should not be taken as your own*. [emphasis added] (Class 4 Group 2)
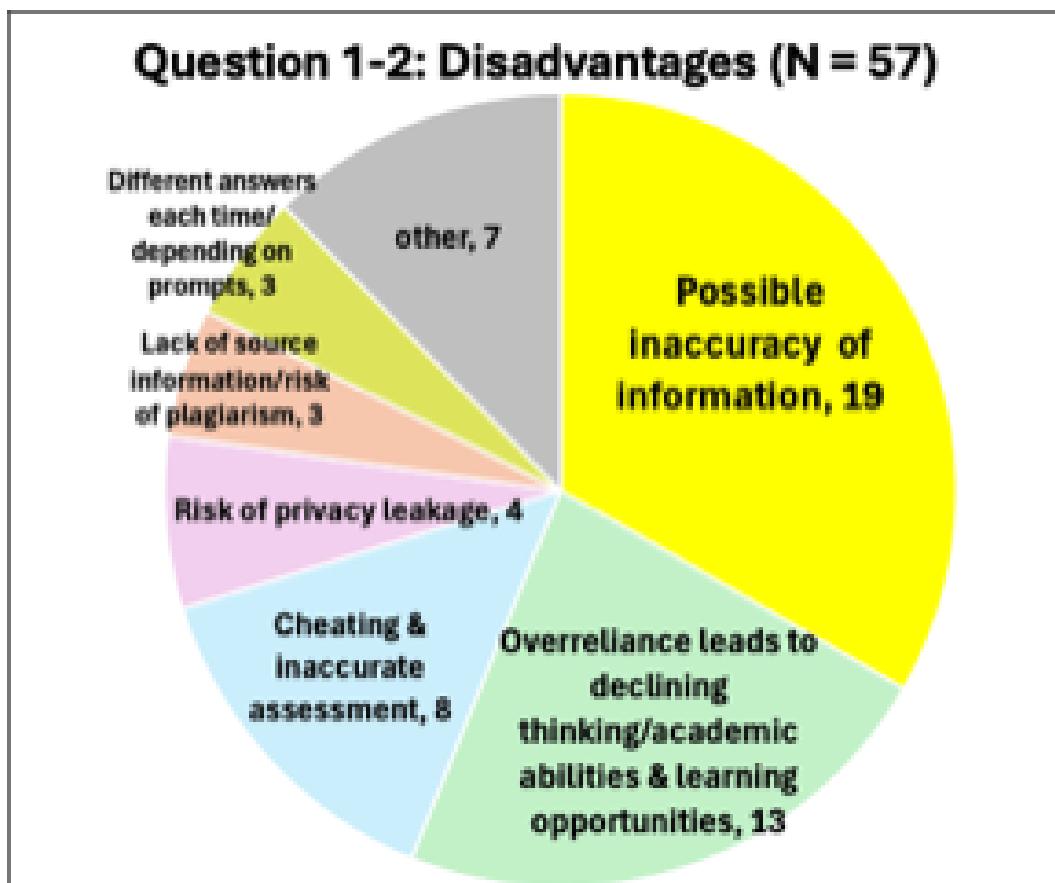
The last comment is particularly noteworthy, as it shows the students' awareness of the significance of avoiding plagiarism when using the chatbot.

Disadvantages of using ChatGPT

Several disadvantages were reported; some were shortcomings inherent in the AI tool and others were issues stemming from inappropriate use. The most frequently observed concern mentioned by most groups was the potential inaccuracy of information provided by ChatGPT. This was followed by the risk of overreliance on the chatbot, which could diminish thinking and academic abilities as well as learning opportunities. Also noted were the risks of academic dishonesty and the consequent inaccurate assessment, privacy leakage, unintended plagiarism due to the lack of source information, and inconsistent responses to identical questions or depending on the prompts. Other limitations included the inadequacy in addressing technical or specialised topics, a lack of emotional understanding, and the possibility of all students producing identical works for the same homework or essay assignments.

Figure 2

Disadvantages of Using ChatGPT for Academic Purposes

Question 1-2: Disadvantages (N = 57)

Different answers each time/ depending on prompts, 3
other, 7
Possible inaccuracy of information, 19
Lack of source information/risk of plagiarism, 3
Risk of privacy leakage, 4
Cheating & inaccurate assessment, 8
Overreliance leads to declining thinking/academic abilities & learning opportunities, 13

In contrast to some concerning comments about the advantages, students' answers about the disadvantages demonstrated their critical thinking. For instance, the segment below highlighted an essential consideration when using the chatbot as an information-gathering tool.

> ChatGPT learns information on the Internet and conversation with users, so its information is not always correct. And, sources are not clear. *Even if ChatGPT's answers are wrong, we cannot realize its answers are incorrect unless we have more knowledge.* [emphasis added] (Class 2 Group 4)

Moreover, some thoughtful insights into the fundamental purpose of university studies were observed.

> "Overuse of ChatGPT cause [sic] us to lose thinking ability and writing ability. ChatGPT could take away an important chance that we grow up in university!!" (Class 2 Group 1)
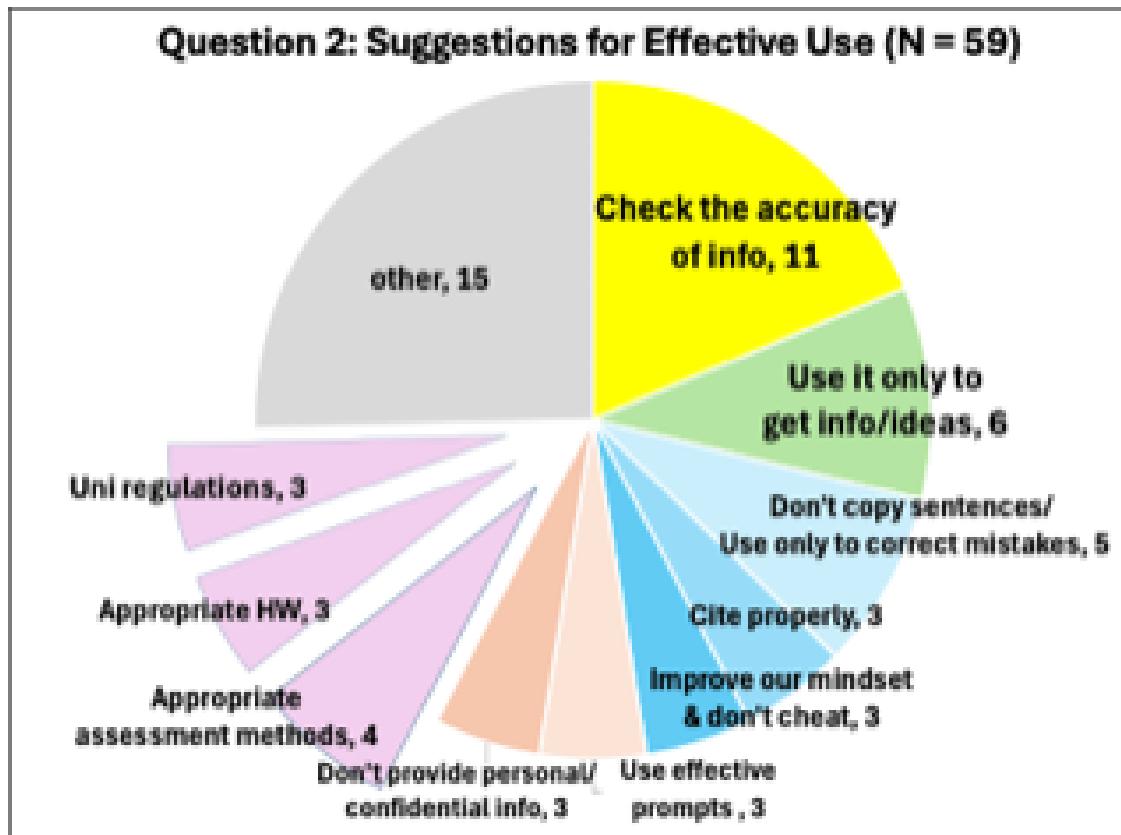

Suggestions for Effective Use: How to Maximise the Advantages and Minimise the Disadvantages

A wide variety of suggestions were presented for using ChatGPT effectively, maximising its benefits and minimising its shortcomings. The most frequently proposed was to verify information by, for example, consulting other sources. Many other suggestions focused on how to prevent plagiarism and academic dishonesty: using the chatbot solely for obtaining information or ideas, limiting its use to linguistic error correction and avoiding copying the sentences verbatim, citing properly, and improving students' mindset. Some groups emphasised the importance of selecting effective prompts (e.g., specific questions in English) and refraining from sharing personal or confidential information.

Also observed were some recommendations directed at the university and teachers, such as the introduction of university-wide regulations and appropriate homework and assessment methods (e.g., requiring the submission of records of their interactions with ChatGPT and incorporating oral examinations). Approximately a quarter of the suggestions were categorised as "other". These included providing feedback to OpenAI, developing critical skills for evaluating the reliability of information, consulting with ChatGPT only after making independent attempts, and using it as a conversational partner. Notably, one group (Class 5 Group 3) concluded that ChatGPT should not be used, at least yet, due to the potential inaccuracy of information and the absence of clear university-wide regulations.

Figure 3

Suggestions for Effective Use of ChatGPT for Academic Purposes

Question 2: Suggestions for Effective Use (N = 59)

A qualitative analysis of students' comments revealed different perceptions of plagiarism amongst groups. Some interpreted it as using ideas generated by ChatGPT; "…it's important to separate the roles. Humans should focus on thinking, and AI should create sentences…." (Class 1 Group 4). Others associated plagiarism strictly with copying language verbatim; "We will be considered plagiarism [sic] if we copied a sentence that ChatGPT generated" (Class 2 Group 1). Notably, one group (Class 1 Group 3) even proposed using the chatbot to produce stories, ideas, and responses specifically tailored to their essay questions and assignments.

Conclusion, pedagogical implications, and future directions

The findings indicate that students were generally aware of both the advantages and disadvantages of using ChatGPT for academic purposes. They suggested various ways for utilising the tool effectively by maximising its benefits and mitigating potential drawbacks. Many responses reflected students'

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critical thinking and research. However, no discussion was presented as to whether using ChatGPT for information gathering significantly saves time and effort, given the necessity of verifying the information and sources. It is worth noting that one group concluded that ChatGPT should not be used for their studies, at least yet, due to its serious limitations.

The results of the quantitative analysis were somewhat predictable and similar to findings reported in previous research. However, the qualitative analysis offered some valuable pedagogical insights. There were comments that revealed students' attitudes towards "studies" and their interpretations of "support", some of which may differ from teachers' expectations. In addition, some confusion regarding the concept of plagiarism was observed; some viewed it as using the chatbot's ideas, while others as copying the exact wording. These findings suggest that a follow-up discussion on the purpose of university studies, academic integrity, and the relationship between ideas and language would be beneficial for students' future academic growth. In addition, there were suggestions directed at the university and teachers to ensure fair evaluation, such as introducing oral examinations and requiring students to submit records of their interactions with ChatGPT. Such considerations will be essential for future assessment, as the influence of generative AI becomes increasingly unavoidable.

Although no systematic instruction was provided, many students, most of whom had never used ChatGPT before, explored it independently to prepare for the discussion. The ample time given to share and discuss their firsthand experiences and ideas with their classmates enabled the students to gain a clearer understanding of how the chatbot functions, its advantages and disadvantages, and to consider effective ways of using it. It is believed that this study yielded more valid data than one-off survey studies common in past research, which may have elicited responses based solely on speculation or secondary information from the Internet.

Since this study was conducted, generative AI, including ChatGPT, has undergone significant updates and improvements, addressing some of the limitations noted by the students. Consequently, the use of such tools is becoming increasingly accepted and widespread in real-life contexts. In such circumstances, an essential question arises; will students want or need to be able to read academic text, write essays, and create presentation scripts without relying on generative AI? This question will form the basis of future exploration.

Notes

1. The only exception was the Faculty of Computer and Information Sciences. Their guidelines published in April 2023 clearly state, "The use of generative AI for items directly related to credit evaluation (all reports and assignments to be submitted) is prohibited in principle" (Fujita, S., & Koike,

T., 2023). However, none of the participants belonged to this faculty, and their guidelines are out of the scope of the current study.

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