Awareness and Experiences of Text-Generative AI among Undergraduates in General English Courses

Shuichi AMANO
Atsushi NAKAGAWA
Katsuhiro YAMAUCHI
Institute for Foreign Language Research and Education
Hiroshima University
Yuka TAKAHASHI
Global Education Center
Tokyo Kasei University

Generative AI is transforming the landscape of language education with substantial advances in a short period. It provides exceptional capabilities, especially for text generation, and can be applied in a variety of areas, including bidirectional translation and feedback provision. Consequently, it presents the potential to redefine methods, techniques, approaches, and lesson designs in language teaching, with important implications for both educators and learners, particularly in university language courses, as AI tool usage by students is not limited by age regulations.[1] Moreover, generative AI has the potential to support students in independent learning outside of classroom settings, particularly by providing automated feedback on writing practice and serving as conversational partners for speaking practice. In turn, this may compel educators to considerably rethink what is traditionally conducted during lesson time and what is assigned as homework. While such changes may greatly disrupt educators' current approaches and methods, these may also contribute to improving student learning effectiveness. In the field of language education, there should be a careful discussion on how to incorporate and utilize these technologies effectively.

With the advent of these technological innovations, an important question arises: To what extent are students in general English courses aware of and utilizing these tools in their learning endeavors? Discussions and groundbreaking research on the role of AI in academic contexts are beginning to emerge (Coyne et al., 2023; Dakakni & Safa, 2023; Hwang et al., 2023; Kang & Yi, 2023; Kohnke et al., 2023; Kubota, 2023; Mizumoto & Eguchi, 2023; Pfau et al., 2023; Sasaki, 2023; Warschauer et al., 2023). For example, Mizumoto and Eguchi (2023) found that AI-based automated essay scoring is both reliable and consistent, capable of providing beneficial support for human evaluations. However, there is a still discernible gap in understanding how students interact with text-generative AI tools. Our survey aims to bridge this gap by examining how students in general English courses are aware of and utilize text-generative AI tools, particularly six months after the introduction of ChatGPT, a vanguard of such tools. Comprehending this aspect is crucial for educators and curriculum developers as they navigate the incorporation of conventional pedagogical strategies with burgeoning technological advancements in language education programs.

In our role as instructors and curriculum coordinators within the general English courses at Hiroshima University's liberal arts education program, the survey assumes greater significance, because student input from these courses can considerably influence the development of future pedagogical approaches. Our

research would provide educators with valuable insights, enabling them to effectively guide students in using text-generative AI tools. This contributes to ensuring that English language teaching remains up-to-date and versatile in response to the rapid technological changes characterizing the contemporary era. Considering that generative AI has only been publicly available for a year at the time of this writing, and acknowledging the limited academic literature on this topic, we have chosen to focus directly on the aims of this paper. This approach allows us to concentrate our discussion on the primary topics without the need for an extensive literature review.

METHODS

Participants

A total of over 1,000 first-year undergraduates enrolled in the general English courses of Hiroshima University's liberal arts education program participated in the study. Of these, 941 agreed to cooperate with the survey and provided their responses. In terms of linguistic background, almost all participants primarily speak Japanese as their first language, with only a few exceptions being international students. After completing the liberal arts program, these students pursue specialized fields spanning education, engineering, mathematics, physics, chemistry, geoscience, biology, informatics, law, medicine, and nursing.

Materials

The survey, developed using Microsoft Forms, consisted of a mixture of closed-ended and open-ended questions in Japanese. These were formulated to gauge students' general awareness, usage frequency of generative AI, and to elucidate the primary reasons students engage with this technology, especially regarding their initial encounters. Additionally, the survey aimed to measure how often and for what private, academic, and language learning-related purposes students used the technology.

Procedure

The survey was conducted in early June 2023 during class sessions. The second, third, and fourth authors administered the survey in their classes.[2] They approached students in each class to request participation, providing detailed information about the survey's purpose and duration. They also emphasized that participation was anonymous, confidential, and voluntary, with the option to withdraw at any stage. Participants were encouraged to respond candidly while being assured of their anonymity. Responses to the closed-ended questions were summarized using descriptive statistics (frequency and rate). In response to the open-ended questions, which consisted mainly of brief descriptions, the lead author selected typical and noteworthy responses.

RESULTS

The subsequent sections present an overview of students' awareness and experiences using text-generative AI tools. Our analysis begins with the overall name recognition levels with various AI tools, followed by an examination of usage frequency and the tools students prefer for their private, academic, and language learning tasks. Additionally, we investigate the primary purposes behind students' use of these AI tools, illuminating their motivations and rationales.

General Usage Experience of Text-Generative AI

Initially, we examined student awareness of various text-generative AI tools. Table 1 presents the responses, where participants were queried to identify all tools they recognized by name, regardless of their usage experience. The findings indicated considerable variability in name recognition rates across different AI tools. ChatGPT, the earliest to be released, had the highest recognition rate of 97.77%, which equates to 920 out of 941 respondents being aware of its existence. Following ChatGPT, Bing AI Chat had a recognition rate of 20.94%, while Bard and Perplexity AI were recognized by 6.06% and 1.59% of participants, respectively, reflecting their more limited recognition. It is also important to acknowledge that some students may be aware of tools not covered in our survey; however, 2.34% of students did not recognize any of the tool names listed as options. The data suggest a generally high awareness of text-generative AI tools among the participant students.

TABLE 1. Recognition of the Text-Generative AI Tools (Multiple Answers Allowed)

Tools	Number	Rate
ChatGPT	920	97.77%
Bing AI Chat	197	20.94%
Bard	57	6.06%
Perplexity AI	15	1.59%
None of the above	22	2.34%

As the next step, we asked our participants to name the text-generative AI tools they use most frequently, inquiring about their experience. The results presented in Table 2 show that 71.52%, or 673 participants, indicated "none of the above," which suggests that most surveyed students have not utilized any of the listed tools. Among those who did identify a frequently used tool, ChatGPT was the preferred choice, selected by 25.50% of respondents. Following this, Bing AI Chat was chosen by 2.66% of students. Bard and Perplexity AI were also mentioned, but the number of students selecting these options was notably small.

TABLE 2. Usage Frequency of the Text-Generative AI Tools

Tools	Frequency	Rate
ChatGPT	240	25.51%
Bing AI Chat	25	2.66%
Bard	2	0.21%
Perplexity AI	1	0.11%
None of the above	673	71.52%

The awareness and general usage experience of text-generative AI were as mentioned above. When we inquired about students' name recognition of the tools, the awareness was notably high. However, it became evident that the name recognition rate for each AI tool varied significantly. ChatGPT, particularly, had a high recognition rate, with most students familiar with it, whereas the awareness of other tools was relatively low. Next, when we asked students about their experience using AI tools, the majority responded that they had

never used any. Among those with experience, ChatGPT was the most frequently used, while the usage rates for other tools were significantly lower.

Table 3 details how students first became aware of text-generative AI tools. Online social networking services were the most common, constituting over 40% of the responses, emphasizing their effectiveness in disseminating information among students. Traditional broadcast media outlets, such as television and radio, still had a notable impact, with approximately 20% of the responses. University professors also emerged as a significant source of information, contributing to 12.65% of the responses. Together with friends, acquaintances, and the previously mentioned sources, these accounted for 87.26% of how students discovered text-generative AI tools. On the other hand, 14 students mentioned that they first learned about generative-AI through this survey. In the "other" category, there were instances such as online streaming television programs and one-time lectures by prominent guest speakers invited by our university. This data reflects the diversity in how students acquire information about new technological tools, albeit primarily through social networking services and traditional broadcast media.

TABLE 3. Initial Triggers for Awareness of Text-Generative AI

First learned about AI tools	Number of students	Ratio
Social networking services	387	41.13%
TV, radio	205	21.79%
University professors	119	12.65%
Friends, acquaintances	110	11.69%
Online articles excluding social networking services	29	3.08%
Parents	22	2.34%
High school teachers	22	2.34%
Others	15	1.59%
This questionnaire	14	1.49%
Printed newspapers, magazines	12	1.28%
Teachers other than high school or university	4	0.43%
Relatives	2	0.21%

Experience with Text-Generative AI by Purpose

One of the primary objectives of the present survey was to differentiate between experiences associated with language learning and those pertaining to other purposes. We therefore classified the purposes into three categories: language learning, non-language academic activities, and non-academic private purposes. Our inquiries addressed the students' experiences with text-generative AI, encompassing the specific tools used, the types of content generated, and the perceived efficacy.

Upon examining the purposes for which students used AI tools, it was observed that 21.57% of students used AI tools for purposes outside of academia, representing the highest proportion, as indicated in Table 4. This was followed by 15.09% using AI for non-language academic purposes. Usage for language learning was only at 6.16%. These findings suggest that students are more inclined to experiment with AI tools for information gathering or entertainment and personal hobbies, potentially attributed to the novelty of ChatGPT, rather than for academic study or research. The modest reported usage of generative AI for

language learning may suggest either a lack of full confidence in these tools, a preference for other resources like dictionaries and translation tools, or insufficient knowledge to use these tools effectively.

TABLE 4. Text-Generative AI Usage Experience by Purpose

	Language learning purpose		Academic purpose		Private Purpose	
Response	Number of students	Rate	Number of students	Rate	Number of students	Rate
Yes	58	6.16%	142	15.09%	203	21.57%
No	883	93.84%	799	84.91%	738	78.43%

When examining the differences in generative AI tool usage by purpose, for which multiple responses were allowed, ChatGPT consistently had the highest usage rate, followed by Bing AI Chat, and then Bard and Perplexity AI, in that order, as indicated in Table 5. From the survey results, it becomes clear that ChatGPT is the most preferred and tends to be the most utilized across all purposes, while other AI tools are relatively less frequently used. In particular, the fact that the proportion of "none of the above" responses exceeded the usage rates of Bing AI Chat, Bard, and Perplexity AI in several cases suggests that these tools might not be well-recognized among users, especially in terms of how to effectively utilize them.

TABLE 5. Text-Generative AI Tool Usage by Purpose (Multiple Answers Allowed)

	Language learning purpose		Academic purpose		Private purpose	
Tool	Number of students	Rate	Number of students	Rate	Number of students	Rate
ChatGPT	45	75.00%	131	82.91%	183	79.57%
Bing AI Chat	4	6.67%	17	10.76%	28	12.17%
Bard	0	0.00%	3	1.90%	7	3.04%
Perplexity AI	0	0.00%	1	0.63%	1	0.43%
None of the above	11	18.33%	6	3.80%	11	4.78%
Total	60	100%	158	100%	230	100%

The assessment of the perceived efficacy of generative AI for specific purposes showed varying results, as Table 6 illustrates.[3] In language learning, a significant majority, approximately 91%, agreed on its effectiveness, including those who chose "somewhat agree." Notably, none of the respondents chose "disagree" or "somewhat disagree." In academic areas beyond language learning, about 81% recognized its efficacy, counting both "agree" and "somewhat agree" responses. However, a small group did express dissatisfaction, choosing "disagree" or "somewhat disagree." For private use, 38.12% fully agreed on AI's effectiveness, with the total, including "somewhat agree," reaching around 74%. These findings highlight how students' views on AI's effectiveness vary depending on its purpose. Language learning, in particular, received the most positive feedback, suggesting AI's potential in this field. It is important to note, however, that the group of students using AI for language learning was the smallest, which may have influenced the high rate of positive feedback in this area. The more moderate responses for non-language academic and personal usage suggest areas where AI tool utilization can be improved. Additionally, the presence of dissenting opinions reflects some skepticism toward AI tools. Addressing these areas, including language learning support through AI, remains a challenge for the future.

TABLE 6. Perceived Efficacy of Text-Generative AI Usage

	Language learning purpose		Academic purpose		Private purpose	
Response	Number of students	Rate	Number of students	Rate	Number of students	Rate
Agree	37	64.91%	74	53.24%	77	38.12%
Somewhat agree	15	26.32%	39	28.06%	73	36.14%
Cannot choose	5	8.77%	13	9.35%	38	18.81%
Somewhat disagree	0	0%	8	5.76%	9	4.46%
Disagree	0	0%	5	3.60%	5	2.48%
Total	57	100%	139	100%	202	100%

To develop hypotheses about the varied recognition of generative AI's efficacy for different purposes, understanding the actual usage patterns of generative AI among students is essential. However, in this survey, the actual usage patterns were merely addressed through brief responses to open-ended questions,[4] thereby posing critical challenges to conducting a thorough analysis. Consequently, we chose to limit our discussion to presenting a selection of typical and noteworthy responses. Primarily, given that this is a survey centered on text-generative AI within the broader AI field, it is unsurprising that usage patterns geared towards language proficiency support, such as editing, rephrasing, translating, and generating text, were notably prevalent, especially in responses on language learning purposes. The following are examples of such responses: "I used it to correct the English sentences I wrote" (Response No. 348), "I used it for parts of a report on a topic of interest that I couldn't express well myself" (Response No. 243), "I used the translation function when thinking about an English speech" (Response No. 368). Usage patterns geared towards investigating and enhancing comprehension of unfamiliar subjects, predominantly for scholarly objectives beyond language acquisition, were discernible. Examples include: "I used it to research things like etymology" (Response No. 326). While some of these usages were akin to substitutes for traditional internet search engines, additional instances included: "I used it to organize my thoughts and deepen my understanding by discussing with the AI" (Response No. 218). Such patterns were duly acknowledged. Within this category of purpose, there was a considerable number of responses indicating that the respondents utilized the tool in the context of university courses they were enrolled in, with its application in programming classes and related assignments appearing more frequently: "I worked on an assignment in a data science class using ChatGPT" (Response No. 311), "I used it when I didn't know how to write programming source code" (Response No. 299).

In the context of private purposes, responses such as the following were notably prevalent, wherein individuals experimented with the tool driven by personal curiosity: "I tried having a conversation just for fun" (Response No. 71), and "Ever since I found out about ChatGPT, I became interested in its capabilities and playfully asked a few questions" (Respondent No. 46). What proved to be even more intriguing within the realm of personal objectives were the responses that employed generative AI for artistic or creative endeavors. A few noteworthy instances encompass the following: "I had it compose a haiku" (Response No. 13), and "I entered the beginning of a famous novel (such as *I Am a Cat*) into the AI tool and had it write the continuation, enjoying the differences from the original work" (Response No. 10).[5]

DISCUSSION

In this study, we initially explored students' awareness and usage experiences with text-generative AI tools. ChatGPT emerged as the most recognized, followed by Bing AI Chat, Bard, and Perplexity AI, although these were significantly less known compared to ChatGPT. When asked about the most frequently used tool, many students indicated non-usage, but among those who did use such tools, ChatGPT was the most preferred choice. Online social networking services were the most common platforms where students heard about these AI tools for the first time. These findings highlight that while students have a high awareness of text-generative AI tools, their actual usage remains limited.

One of the key objectives of this survey was to differentiate between experiences associated with language learning and those related to other purposes. As such, we categorized the purposes into three groups: language learning purposes, non-language academic purposes, and non-academic private purposes. We found that students most frequently use AI tools for non-academic private purposes, with usage for language learning being the least frequent. This suggests that the innovative nature of tools such as ChatGPT is often leveraged more for information gathering, entertainment, and personal hobbies among students rather than for academic learning and research. This finding might also hint at a broader issue: a general lack of awareness among students about the potential benefits of using AI tools for language learning. Many students may not realize how these tools can enhance their language learning process, suggesting a gap in their understanding of AI capabilities in educational contexts. Additionally, there appears to be an urgent need for learner guidance and training in the responsible and effective use of AI tools for academic purposes. As these tools become more prevalent, incorporating structured programs or workshops that educate students on how to leverage AI for academic research and learning could be invaluable. Such initiatives could help bridge the gap between the current casual use of AI tools and their potential for more profound academic applications.

Regarding the subjective assessment of AI tool effectiveness, there were numerous opinions acknowledging high effectiveness in language learning, while assessments of effectiveness were somewhat conservative in non-language academic and personal use. These results suggest that students' perspectives on the application of AI tools can vary depending on the purpose. The AI use for language learning purposes was limited, but those few students who used them evaluated their usefulness highly. Clearly, there is room for improvement in non-language academic and personal use, and some skepticism remains about AI tools. A key future challenge is to develop better strategies for AI utilization.

CONCLUSION

Our survey revealed insightful aspects of student awareness and experiences with text-generative AI tools, half a year after the release of ChatGPT. Predominantly, the heightened recognition of ChatGPT over other AI counterparts underscores its broader use and substantial social impact. Nonetheless, challenges in practical use, understanding, and risk hedging highlight existing hindrances to familiarity with the applications of these tools. Of particular interest is the analysis regarding the objectives behind utilizing AI tools. The trend of students predominantly employing AI tools for non-academic, personal endeavors, as opposed to language learning, indicates that the foremost use of this technology is for personal amusement and daily information gathering. This suggests that AI tools are primarily viewed as instruments for

convenience and pleasure in everyday life rather than for academic pursuits. Conversely, the affirmative assessment of AI tools in facilitating language learning highlights their prospective utility in educational contexts. However, the minimal involvement of students in AI for language learning indicates that the assimilation of AI into the educational domain is still in its infancy and that there is an urgent need for augmented research and development in this arena.

In education, particularly in language education, developing effective ways to utilize AI tools and improving learning and teaching methods will be essential. It is necessary to explore how AI can best support students in improving their performance. For example, using AI in language learning could greatly help improve writing and speaking skills, which have traditionally been difficult for students to practice independently. Using AI to simulate English conversations with individuals who do not speak Japanese could significantly boost speaking fluency. Also, creating AI-supported learning plans could lead to more meaningful autonomous learning experiences. The role of educators in this context is also important. By integrating AI tools as one of the core elements of educational programs, we can greatly enrich the teaching and learning environment. In advanced language courses, there is the potential to develop syllabi that integrate language learning with enhancing problem-solving skills. For example, utilizing AI to construct authentic problem-based scenarios enables student groups to collaboratively formulate solutions while engaging in English conversations with AI-simulated characters, followed by the presentation for sharing with classmates their strategies and resolutions.

However, there are understandable skeptical perspectives about the use of AI in education. Learning languages through AI might not fully replicate the depth of human interactions and could lack in conveying cultural nuances and emotions. There is also a risk that relying on AI might reduce students' opportunities to independently solve problems and develop critical thinking, as it could offer quick solutions that diminish the learning from challenges and lead to over-dependence on technology. If we consider that the goal of education extends beyond just knowledge transfer and involves cultivating critical thinking, problem-solving skills, and emotional intelligence, we must be cautious that using AI does not neglect these essential aspects of education. Balancing its advantages and limitations becomes vital when incorporating AI into educational settings. Ultimately, AI tools should be utilized as aids in education, helping create an environment where students can grow and develop.

ACKNOWLEDGEMENT

We extend our sincere gratitude to the reviewers for their insightful comments and valuable suggestions, particularly in refining the Discussion and Conclusion sections, which have greatly contributed to the improvement of this manuscript. The initial review for English language clarity of this manuscript was performed using OpenAI's ChatGPT, after which it was further refined through proofreading by each author.

NOTES

1) For example, Bard was not available to anyone under 18 at the time of writing, and ChatGPT required parental consent.
2) The fourth author worked at the Institute for Foreign Language Research and Education, Hiroshima University, until August 2023 and participated in this research project.

3) The total numbers are less than those in Table 4 due to the presence of a few non-respondents.

4) The original responses to the open-ended questions in the survey were in Japanese. The authors translated them into English.

5) The response mentioned *I Am a Cat*, a classic work of Japanese literature written by the well-known novelist Natsume Sōseki.

REFERENCES

Coyne, S., Sakaguchi, K., Galvan-Sosa, D., Zock, M., & Inui, K. (2023). *Analyzing the performance of GPT-3.5 and GPT-4 in grammatical error correction*. arXiv. https://doi.org/10.48550/arXiv.2303.14342

Dakakni, D., & Safa, N. (2023). Artificial intelligence in the L2 classroom: Implications and challenges on ethics and equity in higher education: A 21st century Pandora's box. *Computers and Education: Artificial Intelligence*, 100179. Advance online publication. https://doi.org/10.1016/j.caeai.2023.100179

Hwang, W.-Y., Nurtantyana, R., Purba, S. W. D., Hariyanti, U., Indrihapsari, Y., & Surjono, H. D. (2023). AI and recognition technologies to facilitate English as foreign language writing for supporting personalization and contextualization in authentic contexts. *Journal of Educational Computing Research, 61*(5), 1008–1035. https://doi.org/10.1177/07356331221137253

Kang, J., & Yi, Y. (2023). Beyond ChatGPT: Multimodal generative AI for L2 writers. *Journal of Second Language Writing, 62*, 101070. https://doi.org/10.1016/j.jslw.2023.101070

Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for language teaching and learning. *RELC Journal, 54*(2), 537–550. https://doi.org/10.1177/00336882231162868

Kubota, R. (2023). Another contradiction in AI-assisted second language writing. *Journal of Second Language Writing, 62*, 101069. https://doi.org/10.1016/j.jslw.2023.101069

Mizumoto, A., & Eguchi, M. (2023). Exploring the potential of using an AI language model for automated essay scoring. *Research Methods in Applied Linguistics, 2*(2), 100050. https://doi.org/10.1016/j.rmal.2023.100050

Pfau, A., Polio, C., & Xu, Y. (2023). Exploring the potential of ChatGPT in assessing L2 writing accuracy for research purposes. *Research Methods in Applied Linguistics, 2*(3), 100083. https://doi.org/10.1016/j.rmal.2023.100083

Sasaki, M. (2023). AI tools as affordances and contradictions for EFL writers: Emic perspectives and L1 use as a resource. *Journal of Second Language Writing, 62*, 101068. https://doi.org/10.1016/j.jslw.2023.101068

Warschauer, M., Tseng, W., Yim, S., Webster, T., Jacob, S., Du, Q, & Tate, T. (2023). The affordances and contradictions of AI-generated text for writers of English as a second or foreign language. *Journal of Second Language Writing, 62*, 101071. https://doi.org/10.1016/j.jslw.2023.101071

ABSTRACT

Awareness and Usage Experiences of Text-Generative AI among Undergraduates in General English Courses

Shuichi AMANO
Atsushi NAKAGAWA
Katsuhiro YAMAUCHI
Institute for Foreign Language Research and Education
Hiroshima University
Yuka TAKAHASHI
Global Education Center
Tokyo Kasei University

The primary objective of this study was to explore students' awareness and experiences of text-generative AI tools, half a year after the release of ChatGPT, with a particular focus on how these tools are perceived and utilized in different contexts. We sought to understand the extent to which these tools are recognized and used by students, and how their usage varies between academic and non-academic settings. Our investigation revealed that while there is a high level of awareness of these tools, particularly ChatGPT, their actual usage remains limited. We found that these tools are most commonly used for non-academic private purposes, suggesting that they are primarily seen as sources of entertainment and information gathering rather than tools for academic learning and research. Some students acknowledged the effectiveness of these tools in language learning, indicating a potential usefulness in educational contexts. Nevertheless, their integration into language education is still in its early stages, and there are significant challenges in their practical usage. This study underscores the need for further research and development in this area, particularly in developing effective ways to use AI tools in education and enhancing learning and teaching methods. It is our hope that this research will contribute to the ongoing dialogue about the role of AI in education and help shape future strategies for its implementation.

要　旨

教養英語科目の履修学生におけるテキスト生成 AI の認知度と利用状況

天　野　修　一
中　川　　篤
山　内　勝　弘
広島大学外国語教育研究センター
高　橋　有　加
東京家政大学グローバル教育センター

本研究の主な目的は，テキスト生成 AI ツールに対する学生の認識と経験を調査することであり，ChatGPT 公開から半年の時点で，これらのツールが異なる文脈でどのように認識され，活用されているかに焦点を当てた。特に，その使用方法が学術的な場面とそうでない場面とでどのように異なるのかを理解しようとした。調査の結果，これらのツール，特に ChatGPT の認知度は高いものの，実際の利用は限定的であることが明らかになった。これらのツールは，学業以外の私的な目的で使用されることが最も多く，学術的な学習や研究のためのツールというよりは，主に娯楽や情報収集のソースと認識されていることが示唆された。言語学習におけるこれらのツールの有効性を認めている学生もおり，教育の文脈における潜在的な有用性を示しているが，その一方で，言語教育への統合はまだ黎明の段階にあり，その実用化にはまだいくつもの大きな課題がある。本稿が強調するのは，この分野における更なる研究開発の必要性，特に教育における AI ツールの効果的な利用方法の開発，学習法や指導法の改善や工夫の必要性である。本研究が，教育における AI の役割に関する継続的な対話に貢献し，その導入に向けた将来の戦略を形成する一助となれば幸いである。