Students Use of Generative Artificial Intelligence (ChatGPT) at Rikkyo University

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Abstract

This is a study investigates the awareness, reasons of and use of ChatGPT at Rikkyo University in Japan. Two quantitative data ($n^1 = 69$ and $n^2 = 96$) and one qualitative data (n = 78) were collected over a period of 7 months to measure student perception of use, trust, frequency and reasons. Descriptive statistics are reported alongside content analysis of qualitative text data. Findings are compared with another similar study by Ohmori et al. (2023) that was conducted at around the same time as this study. Findings reveal comparable and some significant differences in the use of generative AI for learning content, languages, generating ideas and writing graded assignments. The paper also discusses trust, reliability, use in university and AI literacy. The paper concludes with its limitations and suggestions for the way forward in the light of the findings.

Keywords: *ChatGPT, Generative artificial intelligence, AI literacy, Rikkyo University*

Introduction

Since the inception of Chat Generative Pre-trained Transformer (ChatGPT) in November 2022, users reached 100 million in just 2 months (Milmo, 2023) and continues at an ever-increasing rate (Mogavi et al., 2024; Duarte, 2024). ChatGPT is a sophisticated chatbot technology that uses Natural Language Processing (NLP) to produce coherent and contextually relevant responses to questions (OpenAI et al., 2023). This ability to customize intelligent responses and behave in a conversational manner underscores its potential as an educational resource for students for learning as well as for completing their assignments. It is no wonder that the higher percentages of users are between the youthful ages of 18 to 30 (Duarte, 2024).

The use of generative artificial intelligence by students has caught the education world by surprise (Lodge et al., 2023). Universities and teachers were scrambling (and still are) to try to understand the implications and repercussions in not just teaching but also in students using generative AI and, in particular, generating text-based homework and assignments. Reports emerged around the world such as the United Kingdom (Freeman, 2024) and Japan (Ohmori et al., 2023) that university students were beginning to use generative AI.

As a teacher at Rikkyo University and one who is very much interested in using

technology for teaching, I began to wonder about my students' interest and use of generative AI. I half suspected that my students use generative AI for their studies and some even use it to write their assignments. Anecdotal evidence from colleagues and news media furthered my interest in this phenomenon. What is the extent of this phenomenon? How many of them are aware of ChatGPT, the first iteration of generative AI? And if so, how prevalent are they using it for their studies? What do they use it for? And what are the reasons why they turn to ChatGPT? Only by conducting a proper investigation will I be able to be certain. With this in mind and the rapid adoption of generative AI in public and educational use, I undertook this study to investigate my students' awareness and use. This study can also serve as a record of the situation of Rikkyo's students' use of generative AI.

Literature Review

Generative AI is vastly different from the traditional artificial intelligence (AI) which has been around for several decades now. Generative AI refers to a form of AI that is able to construct new content that has human-like creativity. In contrast to traditional rule-based AI, generative AI can create diverse types of content, including text, images, and even music by learning from large datasets (Ramesh et al., 2021). Using recurrent neural network that allows outputs to affect subsequent inputs and outputs, generative AI learns on its own (Huang et al., 2024). In other words, generative AI gets better at predictions with time. Examples are models like GPT-3 and DALL-E. Traditional AI, on the other hand, is primarily focused on understanding and processing text, such as playing chess or performing complex calculations (Russell & Norvig, 2021). They rely on predefined rules and logic and are limited by the explicit knowledge encoded in their rules. Examples are rule-based grammar checkers such as Grammarly. Generative AI and other forms of its iterations, like machine learning and reinforcement learning, can learn from vast amounts of unstructured data and create outputs that lie outside the initial training set (Ramesh et al., 2021). Today's ChatGPT4 uses reinforcement learning with human feedback (OpenAI, 2022) in an ever-increasing ability to learn and produce more accurate and sophisticated responses than the previous versions.

This generative ability is the reason why users are flocking to generative AI applications. Students can now "write" essays and reports by typing on the exact specifications of the assignments set by their teachers. This is very different from the past when students had to search for the information, comprehend, filter, compare, organize, synthesize and create knowledge on their own. Traditional AI can only perform bits and parts of the process, but generative AI can do the whole nine yards of thinking and creating for the user. A Higher Education Policy Institute (HEPI) report on 1,250 United Kingdom undergraduate students showed that around 53% of students have used generative AI to help with their assessments with 13% generative texts for assessments (Freeman, 2024).

In Japan, there is a growing use of generative AI among university students. A survey by

Yomiuri Shimbun ("Half of Japanese university students have used generative AI; 30% use on regular basis," 2024) found that 46.7% of respondents have used ChatGPT or other generative AI, with 28.9% using such services frequently. In a national wide survey in Japan conducted around the same time as this study, Ohmori et al. (2023) and his team found that 94.1% of undergraduates knew and 32.4% of them used ChatGPT for homework. They also found that 18.8% used it daily. Among the users, 15.8% used ChatGPT to write assignments and 70.7% to improve their "thinking ability."

Besides using generative AI for their assignments, what else do students use generative AI for? The HEPI report (Freeman, 2024) reported that 66% used ChatGPT for explaining concepts, 53% for summarizing and 54% for suggesting research ideas. And 3% thought it was acceptable to use generative AI text in assessments without editing. The Yomiuri Shimbun ("Half of Japanese university students have used generative AI; 30% use on regular basis," 2024) cited 22.1% of students used generative AI "as references for writing papers and reports," and 12.1% "for translation or essays in foreign languages."

Purpose of Study and Research Questions

In the light of the rapid adoption of generative AI, and its profound implications to learning and teaching, this research seeks an empirical understanding of the awareness and usage of ChatGPT of Japanese university students. Specifically, this study investigates the perception, trust, specific use, and the frequency of use to get an understanding of ChatGPT among students. In addition, the reasons behind its use in teaching and learning are also explored. Therefore, the following are the research questions that this paper seeks to illuminate.

Research question 1: What is the perception of students about its use, trust, and as a tool for learning?
Research question 2: What is the frequency of use for writing graded assignments, generating ideas, learning, and learning languages?
Research question 3: What are the reasons for students' perception of use of AI in teaching and learning?

This study confines the investigation to the generative AI to applications built on large language models (LLMs) and in particular, ChatGPT. At the time of study, the students were using the free version, GPT-3. While there are other kinds of generative AI based on images or video, the questionnaire was based on text-based prompt and response version.

Method

This research uses both quantitative and qualitative data collection methods. Two quantitative samples were surveyed, with the first one (n = 69) conducted between 30 June to 7

July 2023 (R1) and another (n = 96) between 15 to 19 January 2024 (R2). Only one qualitative sample (n = 78) was collected between 15 to 19 January 2024. The participants were first-year students from Rikkyo University. Their major fields of studies were business, law, psychology, media, international relations, tourism, sociology, and economics.

Empirical data was collected using an online survey form consisting of a 26-item questionnaire. The two data points allow this study to compare the rate and adoption of use between the gap of 7 months. The survey used the Likert scale, "1 = least likely to 5 = very much" for items (S1–S10) measuring degree of agreement and, "1 = none to 5 = daily" for items (Q1–Q10) measuring frequency (Appendix A Questionnaire items). Q11–Q14 ask about their experience with ChatGPT with their teachers and whether they shared ChatGPT with their friends. Q15 asks for their reasons for use. The survey was written in Japanese as well as in English.

Means for each of the S1–S10 items will be reported and discussed. The means are reported with standard deviations (SD) and standard error (SE) to show the variability of values in a sample data and variability between the sample from the same population, respectively. Frequency for each of the Q1–Q10 items will be discussed and reported in percentages.

Qualitative data was collected from a written response to the question of "Should students in University use generative AI for their assignments?" Students were also requested to provide at least three reasons for their responses and were given 3 weeks to write their response. Content analysis was conducted on the qualitative text submitted by the students. Common words and expressions were aggregated and those with high frequency will be reported and discussed.

This study's findings will be discussed with references to a similar survey conducted between May 24 to June 2 by Ohmori et al. (2023), which was around the same time as this research started. Their findings were reported in the DBER Center on June 8, 2023.

Findings

Research Question 1

What is the perception of students on its use, trust, and as a tool for learning?

Table 1

Knowledge of ChatGPT and Use

	R2 sample			R1 sample			∂		
	Male (N = 31)	Female (N = 65)	Overall (N = 96)	Male (N = 31)	Female (N = 38)	Overall (N = 69)	Male	Female	Overall
A	30 (96.8%)	64 (98.5%)	94 (97.9%)	31 (100%)	37 (97.4%)	68 (98.5%)	*-3.2*	*+1.1*	*-0.6*
B	21 (67.7%)	32 (49.2%)	53 (55.2%)	20 (64.5%)	10 (26.3%)	30 (43.5%)	*-3.2*	*+22.9*	*+11.7*

Note. A: Knowledge of ChatGPT; B: Used ChatGPT

Knowledge of ChatGPT is high with 98.5% in June 2023 (R1) and 97.9% in January 2024 (R2) (Table 1). There is not much of a difference between the males and females in their awareness.

43.5% used ChatGPT in June 2023 (R1) with an increase of 11.7% in January 2024 (R2). However, there is a sharp difference between the genders when it comes to using ChatGPT. While there was a slight increase of 3.2% in males, females increased by 22.9% after 7 months. There is a 18.5% difference between the males and females in January 2024 (R2) and there are 38.2% more male than female users in June 2023 (R1).

Table 2

Overall Frequency of Use

	R2 sample			R1 sample		
	Male (21)	Female (32)	Overall (N = 53)	Male (20)	Female (10)	Overall (N = 30)
once/ week	6 (28.6%)	9 (28.1%)	15 (28.3%)	6 (30.0%)	2 (20.0%)	8 (26.7%)
2–3/ week	5 (23.8%)	8 (25.0%)	13 (24.5%)	7 (35.0%)	5 (50.0%)	12 (40.0%)
4–6/ week	6 (28.6%)	9 (28.1%)	15 (28.3%)	7 (35.0%)	1 (10.0%)	8 (26.7%)
daily	4 (19.0%)	6 (18.8%)	10 (18.9%)	0 (0%)	2 (20.0%)	2 (6.6%)

The frequency of use was naturally more towards once to twice or 3 times a week when compared to daily use (Table 2). Although smaller in percentages, the discovery that students use it daily is an interesting phenomenon at this early stage of generative AI adoption. There was an increase of 12.0% of daily users with 18.9% in January 2024 (R2) compared to 6.6% in June 2023 (R1). There were no noticeable differences between genders in the frequency of use when it came to January 2024.

Table 3

Overall Perception of ChatGPT- Trust (S1–S4)

	R2 sample			R1 sample			∂
	Mean	*SD*	*SE*	**Mean**	*SD*	*SE*	
S1	**3.11**	*0.90*	*0.09*	**3.00**	*0.83*	*0.10*	*+0.11*
S2	**2.55**	*0.92*	*0.09*	**2.65**	*0.95*	*0.11*	*-0.10*
S3	**2.38**	*1.33*	*0.14*	**2.57**	*1.06*	*0.13*	*-0.19*
S4	**2.54**	*1.12*	*0.11*	**2.81**	*1.00*	*0.12*	*-0.27*

Note. See Appendix A for details of questions S1–S4.

Students somewhat trust ChatGPT when it comes to the information generated (S1). The mean increased slightly from 3.00 ± 0.10 (SE) to 3.11 ± 0.09 (SE) (Table 3). However, when it comes to verifying information (S3 & S4) and reliability (S2), the students were mixed. The mean ranges from 2.57 ± 0.13 (SE) to 2.81 ± 0.12 (SE) with a larger SD in June 2023. Significantly, this trust in reliability slipped over 6 months in January 2024 with the mean dropping from 2.38 ± 0.14 (SE) to 2.55 ± 0.09(SE).

Table 4

Gender Perception of ChatGPT- Trust (S1–S4)

Item	Male						
	R2	*SD*	*SE*	**R1**	*SD*	*SE*	*∂*
S1	**3.13**	*0.75*	*0.14*	**2.87**	*0.83*	*0.15*	*+0.26*
S2	**2.71**	*0.89*	*0.16*	**2.55**	*0.98*	*0.18*	*+0.16*
S3	**2.68**	*1.30*	*0.24*	**2.52**	*1.07*	*0.20*	*+0.16*
S4	**2.68**	*1.09*	*0.20*	**2.71**	*1.08*	*0.20*	*-0.03*

Item	Female						
	R2	*SD*	*SE*	**R1**	*SD*	*SE*	*∂*
S1	**3.11**	*0.96*	*0.12*	**3.11**	*0.82*	*0.13*	*0.00*
S2	**2.48**	*0.93*	*0.12*	**2.74**	*0.91*	*0.15*	*-0.26*
S3	**2.23**	*1.32*	*0.17*	**2.61**	*1.04*	*0.17*	*-0.37*
S4	**2.48**	*1.12*	*0.14*	**2.89**	*0.91*	*0.15*	*-0.42*

Note. See Appendix A for details of questions S1–S4.

When it comes to how the genders view ChatGPT, both were consistent in their trust (S1) with the means hovering between 2.87 ± 0.15 (SE) to 3.13 ± 0.14 (SE) over the 7 months (Table 4). Interestingly, while the males slightly increased their trust level (∂ = -0.03 to +0.26) over time, the females decreased considerably (∂ = -0.26 to -0.42). The females began with a slightly higher trust level but decreased consistently across the 3 items (S2–S4).

Table 5

Overall Perception of ChatGPT- Learning (S5 and S6)

Item	R2 sample			R1 sample			
	Mean	*SD*	*SE*	**Mean**	*SD*	*SE*	*∂*
S5	**2.82**	*1.15*	*0.12*	**3.01**	*1.15*	*0.14*	*-0.19*
S6	**3.41**	*1.10*	*0.11*	**3.25**	*1.18*	*0.14*	*0.16*

Note. See Appendix A for details of questions S5–S6.

Overall, there is a somewhat positive perception of ChatGPT's effect on learning (S5). The mean ranges from 2.82 ± 0.12 (SE) to 3.41 ± 0.11 (SE) (Table 5). Significantly, students

rated speed (S6) as one of the highest averages, 3.41 ± 0.11 (SE) in January 2024 and 3.25 ± 0.14 (SE) in June 2023.

Table 6

Overall Perception of ChatGPT- Teaching and University (S7–S10)

Item	R2 sample			R1 sample			
	Ave	*SD*	*SE*	**Ave**	*SD*	*SE*	*∂*
S7	**2.42**	*1.22*	*0.13*	**2.67**	*1.16*	*0.14*	*-0.25*
S8	**3.05**	*1.19*	*0.12*	**3.25**	*1.15*	*0.14*	*-0.19*
S9	**3.33**	*0.99*	*0.10*	**3.16**	*0.97*	*0.12*	*0.17*
S10	**2.32**	*1.27*	*0.13*	**2.30**	*1.21*	*0.15*	*0.02*

Note. See Appendix A for details of questions S7–S10.

Students generally want the university to integrate AI (S8) in education (3.05 ± 0.12 (SE) to 3.33 ± 0.10 (SE)) but are mixed when it comes to teachers using them (S7) (2.42 ± 0.13 (SE) in January 2024 and 2.67 ± 0.14 (SE) in June 2023 (Table 6).

Research Question 2

What is the frequency of use in answering questions, generating ideas, writing assignments, and learning languages?

These findings looked at the frequencies of specific use among students who used ChatGPT. A total of 30 (43.5% of N = 69) used ChatGPT in R1 and 53 (55.2% of N = 96) in R2 samples.

Table 7

Specific Use – Graded Assignments (Q1, Q2, Q8 & Q9)

Items	R2 sample			R1 sample		
	Male (21)	Female (32)	Overall (n = 53)	Male (20)	Female (10)	Overall (n = 30)
Q1	14 (66.7%)	16 (50.0%)	30 (56.6%)	11 (55.0%)	8 (80.0%)	19 (63.3%)
Q2	9 (42.9%)	12 (37.5%)	21 (39.6%)	6 (30.0%)	5 (50.0%)	11 (36.4%)
Q8	8 (39.6%)	10 (31.3%)	18 (34.0%)	9 (45.0%)	4 (40.0%)	13 (43.3%)
Q9	10 (45.3%)	14 (43.8%)	24 (45.3%)	8 (40.0%)	4 (40.0%)	12 (40.0%)

Note. See Appendix A for details of questions Q1, Q2, Q8 & Q9.

Among the students who used ChatGPT for their graded assignments, 63.3% used it for content generation (Q1) in June 2023 (Table 7). This specific function remained the highest percentage over the 7 months. The rest were used for preparing for their examinations (Q8) and research for graded assignment (Q10).

Although it is the lowest percentage (36.4% in June 2023), it is significant that students used ChatGPT to write their graded assignments (Q2). The usage behaviour for graded assignments remained largely the same (39.6%) in January 2024. There were no noticeable differences between genders in the specific use of ChatGPT for graded assignments.

Table 8

Specific Use - Ideas and Learning (Q3, Q6, Q7 & Q10)

Items	R2 sample			R1 sample		
	Male (21)	Female (32)	Overall (n = 53)	Male (20)	Female (10)	Overall (n = 30)
Q3	17 (81.0%)	20 (62.5%)	37 (69.8%)	13 (65.0%)	10 (100%)	23 (76.7%)
Q6	13 (61.9%)	21 (65.6%)	34 (64.2%)	9 (45.0%)	6 (60.0%)	15 (50.0%)
Q7	15 (71.4%)	22 (68.8%)	37 (69.8%)	9 (45.0%)	7 (70.0%)	16 (53.3%)
Q10	18 (85.7%)	26 (81.3%)	44 (83.0%)	16 (80.0%)	9 (90.0%)	25 (83.3%)

Note. See Appendix A for details of questions Q3, Q6, Q7 & Q10.

Among the students who used ChatGPT for learning and ideas, 83.0% to 83.3% used it to deepen their understanding (Q10) (Table 8). This specific function remained the highest percentage over the 7 months. The next most frequent use was to generate ideas (Q3) with 69.8% to 76.7%, followed by using ChatGPT to understand difficult and complex concepts (Q6 and Q7). There were no noticeable differences between genders in the specific use of ChatGPT for ideas and learning.

Table 9

Specific Use - Learning Languages (Q4–Q5)

Items	R2 sample			R1 sample		
	Male (21)	Female (32)	Overall (n = 53)	Male (20)	Female (10)	Overall (n = 30)
Q4	10 (47.6%)	15 (46.9%)	25 (47.2%)	9 (45.0%)	5 (50.0%)	14 (46.7%)
Q5	7 (33.3%)	10 (31.3%)	17 (32.1%)	6 (30.0%)	8 (38.1%)	14 (46.7%)

Note. See Appendix A for details of questions S1–S4.

This study discovered that 10.3%–26.0% of students use ChatGPT to correct their English (Q4) and their Japanese (Q5) (Table 9). There was an increase of 15.7% for English but a decrease in 2.6% for Japanese over the 7 months. There were no noticeable differences between genders in the specific use of ChatGPT for ideas and learning.

Research Question 3

What are the reasons for students' perception of the use of AI in teaching and learning?

Table 10

Reasons for Use of ChatGPT (Q15)

Reasons	R2 sample			R1 sample		
	Male (91)	Female (130)	Overall (n = 221)	Male (66)	Female (75)	Overall (n = 141)
Saves time	18 (8.1%)	33 (14.9%)	51 (23.1%)	15 (10.6%)	22 (15.6%)	37 (26.2%)
Saves effort	17 (7.7%)	28 (12.7%)	45 (20.4%)	16 (11.4%)	18 (12.7%)	34 (24.1%)
Convenient	26 (11.8%)	36 (16.3%)	62 (28.1%)	13 (9.2%)	18 (12.8%)	31 (22.0 %)
Easier than asking my professor	8 (3.6%)	5 (2.3%)	13 (5.9%)	3 (2.1%)	3 (2.1%)	6 (4.3%)
Better than going to library	8 (3.6%)	4 (1.8%)	12 (5.4%)	6 (4.3%)	5 (3.6%)	11 (7.8%)
Better than Google search	8 (3.6%)	12 (5.4%)	20 (9.1%)	8 (5.7%)	7 (5.0%)	15 (10.6%)
Others	12 (2.7%)	6 (5.4%)	18 (8.1%)	2 (3.6%)	5 (1.4%)	7 (5.0%)

Saving time, effort and convenience are the main reasons why students use ChatGPT. 26.2% for "saves time," 24.1% for "saves effort," and 22.0% for "convenience" in June 2023. This remained consistent even in January 2024 (Table 10). Students think that using ChatGPT is better than using Google to search for ideas and information (9.1% in January 2024 and 10.64% June 2023).

Qualitative Findings

Students were asked to give a comment on the question, "Should students in University use generative AI for their assignments?." There was a total of 78 responses with 42 stating "yes" and 24 opposing it with 12 staying neutral. Students who stayed neutral expressed both positive and negative reasons and are organized in the following categories of positive and negative reasons, which are summarized below. Reasons with higher frequencies will be

reported first.

Positive Reasons

Most students cited efficiency (39) in learning, especially in helping them do their assignments. They used words and phrases such as "saves time," "fast," and "efficient." In terms of what was efficient, the common words and phrases were, "generating ideas" (this had the highest mention), "checking for information," and "instant feedback."

The next highest was that AI provides customized learning (20). They used words and phrases such as "own pace," "personalized," "provide advice and information tailored to each student," and "adaptive learning." This adaptability is seen in the quotes, "learn from AI whenever you want" and "I can ask any questions I want."

The third highest frequency was learning languages (17), particularly, for writing purposes. Students used words and phrases such as "help me make sentences," "improve my writing," "correcting reports," and "correction of writing" or "incorrect expressions." Others were, specifically, "summarize," "editing," and "translation." Besides writing, some mentioned that AI helps to "improve students' speaking skill" and in "conversations on foreign language." One mentioned "language partner." A few cited words and phrases such as "people tend to feel nervous when they talk with foreign people" and "who have difficulty expressing herself" as the reasons for using AI. It was clear that students used AI for learning as one put it as "very useful for students' assignments and independent learning."

Students mentioned the idea of AI acting as an additional teacher (6) as another reason. They used words and phrases such as "act as a teacher" and "ask any questions." These students added words and phrases such as "meaningful interaction," "learn more things than from my teacher," and "different perspective."

Interestingly, a few students mentioned this reason: the access to AI is open to all (4). They used words and phrases such as "equal access" and "access to all."

Surprisingly, although not directly related to their benefit or learning, students (20) came up with this reason that AI can lessen the workload for teachers. They used words and phrases such as "automated grading," "monitoring," and "giving feedback" as the reasons.

Another reason not directly related to their benefit or learning while at Rikkyo, many cited AI is the future (13). They mentioned they want to learn to use AI. They used words and phrases such as "AI literacy," "The future is full of AI," "for my future" and it will help in learning which "information is correct or not?."

Negative Reasons

The top reason (35) why students do not want to use AI is that they are suspicious of the information generated by generative AI. They used words and phrases such as "not accurate," "not credible," "misinformation," "I do not know what is right and wrong," and "fake information." Some even mentioned "AI makes mistakes" and "lead to wrong understanding."

A couple attributed this to "difficult to judge," and "intentions doesn't match with AI."

The next most cited reason (26) is the use of AI will affect the thinking ability negatively. Students used words and phrases such as "will not think for themselves," "reduce critical and creative thinking," "will not think harder" or "deeply." And some added "decrease learning abilities," "lose the ability to think," "lose language skill," and "stop human growth." Other interesting comments were "AI give only answers to students easily but couldn't give processes" and "I won't remember the content."

The third highest frequency (12) is the issue of copyright. Students used words and phrases such as "copyright infringement," "plagiarism," "misuse," and "cheat."

The rest of the reasons were privacy issues (8), over reliance on AI (5), and lack of social connection (2).

Discussion

Knowledge and Use of ChatGPT

Almost all students (98.5%) knew about ChatGPT in June 2023 (Table 1) after its introduction in November 2022. The awareness level is comparable to Ohmori et al. (2023) nationwide survey of 94.1% (p. 7) but Rikkyo students has a significantly higher incidence of students already using ChatGPT. Rikkyo had an overall of 43.5% of students using ChatGPT with 64.5% males and 26.3% females. Ohmori et al. had 35.7% overall with males at 44.8% and females at 27.1% (p. 7). Knowledge of ChatGPT is clearly very high while the use has steadily increased over 7 months in this study.

As for the frequency of use among the users, only 6.6% used ChatGPT daily (Table 2) in June 2023. This is lower than Ohmori et al.'s (2023) "usage rate in daily learning" for all levels at 20.1% with first years at 18.8%; males at 31.6% and females at 15.2% (p. 10). Males tend to use ChatGPT daily more than females. The daily use of ChatGPT in Rikkyo increased 3 times from June 2023 to January 2024. This is another indication of the increasing frequent use of AI among students. In fact, Yomiuri Shimbun ("Half of Japanese university students have used generative AI; 30% use on regular basis," 2024) reported that half of Japanese University students have used generative AI with 30% using it on a regular basis.

What is a rather astonishing discovery is that Rikkyo University students' awareness of ChatGPT is high *only* 7 months after ChatGPT was introduced in November 2022 and almost half of them have already begun to use it for their studies. Perhaps it is because of Rikkyo's locality in the capital of Japan, or due to the student's socioeconomic background, but it is clear that Japanese students are acquainted with the abilities of generative AI. The question however is not *when* students will use generative AI as they are already using it, but how we, as teachers, manage this phenomenon of prevalent use.

Specific Use for Learning

Our study found almost two-thirds of Rikkyo students used ChatGPT for learning (Table 8). This is higher than Ohmori et al.'s (2023) 32.4% for all levels with first years at 35.7% (p. 7). When used for learning purposes, students used it mostly to deepen their understanding of subject matter. Among the different specific uses of ChatGPT, generating ideas and deepening understanding had the highest usage rates. This is supported by the high averages in their positive perception of AI being a tool for learning (Table 5). The top reasons for using ChatGPT for learning were that it saves time, effort and is convenient (Table 10). This concurs with the qualitative data with the most mentioned words or phrases as "saves time," "fast," and "efficient" for using ChatGPT for studies. Students were using it to generate ideas, check their information, and get instant feedback.

Almost half of the users learned languages from ChatGPT (Table 9). More students used it to learn the English than Japanese language. Students felt they learn how to write and improve their sentences with corrections and feedback from ChatGPT. Learning languages was cited as one of the top reasons why students turn to generative AI. Ohmori et al.'s survey (2023) reported that students think ChatGPT is a positive thing for improving their writing skills (77.5%) and thinking ability (70.7%) (p. 7). Our findings are comparable and encouraging as it appears to be an appropriate use of generative AI for academic purposes.

What is evident is that students are clearly using generative AI to learn content and languages. The efficiency in generating ideas and checking student's work are what students go to ChatGPT for. There is no doubt that all these positive qualities led to students considering ChatGPT as a language partner and an additional tutor.

Specific Use for Graded Assignments

However, what is of concern is that this study discovered that between 36.4% to 39.6% of users used ChatGPT to write their graded assignments (Table 7). This is higher than Ohmori et al.'s (2023) overall usage rate for all levels at 14.0%, and first-year at 15.8% overall with males at 22.7% and females at 10.3% (p. 7). The most common usage, was however, for content and ideas generation when it comes to use for graded assignments. This finding is significant because many students are beginning to leverage generative AI to create content and even write graded assignments. The significance is in the tool's ability to generate, organize, and create content where students had to do that thinking and work before. Generative AI is doing most of the thinking for the students. This "doing all the thinking" is one of the main reasons that students in this study cited as affecting their thinking ability negatively, one of the negative reasons for using AI.

The introduction of generative AI has increased the concern for the possible rise of cheating. These concerns of plagiarism or cheating were highlighted by the students as reasons for discouraging generative AI use. The ethical implications to assessment integrity are a big concern (Lodge et al., 2023). It is perceived that with generative AI, the "barriers to engaging

in cheating behaviour … have been lowered significantly" (p. 3). It is, however, overstated. Stanford discovered that 64% of more than 70,000 high school students cheated on tests between 2002 and 2015, and in 2023, it remained largely the same (Spector, 2023). ChatGPT is just an additional means for students to cheat if they have every intention to cheat. Perhaps, with generative AI, the shortcut just got a lot shorter.

However, the implication remains that teachers need to alter their assignment type and assessment methods. Take home essay or project development will be opened to the use of generative AI and grading criteria that solely based on content may no longer be able to differentiate students' ability to know or possess that knowledge.

What is heartening from this study is that Rikkyo students are not using generative AI to take shortcuts for their graded assignments albeit a number of them are using it to generate their assignments, they are using it to help in their learning. Rikkyo students are using generative AI to generate ideas, clarify difficult and complex concepts and even to learn languages. Students are treating ChatGPT as an additional "tutor" whom they can turn to without anxiety and at any time of the day.

Perception of Trust and Reliability

The findings discovered that students do not rate ChatGPT as a highly reliable source of information after initial use. When asked about reliability and verifying information, the means were relatively high in June 2023 but decreased over time (Table 3). The ∂ increased from half to a quarter SD after 7 months for the female students (Table 4). The male students maintained relatively the same level of trust.

The qualitative data collected in January 2024 had a high of 35 (out of 78) students cited they were suspicious of the accuracy of ChatGPT's answers. They mentioned that they think AI makes mistakes and they do not know how to judge if the answers are credible. The HEPI report also reported that 35% of their respondents do not know how often ChatGPT produces fake information, a term known as "hallucinations" (Freeman, 2024).

The issue of inaccuracy has been reported and discussed with largely inaccurate medical information (Gravel et al., 2023) to fairly accurate ones (Johnson et al., 2023). This issue of accuracy is clearly a concern in the field of education and learning where a review of educational articles on ChatGPT 3.5 highlighted this when students rely on it for learning (Lo, 2023). Bias was also highlighted as an issue of reliability (Edmett et al., 2023).

The issue of inaccurate information was acknowledged by OpenAI, the developer of ChatGPT (OpenAI, 2022). It should be recognized that the first iteration of ChatGPT, ChatGPT 3.5, which was first introduced on November 30, 2022, had limitations in its accuracy and since then, ChatGPT-4, a subsequent version uses a more powerful and larger processing model. The fine-tuning of ChatGPT, on the 4th version uses reinforcement learning with human feedback (OpenAI, 2023), which should improve the accuracy and veracity of the information it generates. Only time will tell how accurate ChatGPT will be in the future.

What is clear is that Rikkyo students are discerning and do not take everything that generative AI produces for them as evidenced by the reasons students gave in their distrust of AI. They are also not as gullible as some educators fear for students when they use AI. This is also a good sign of AI literacy in our students.

Perception of Teaching and Use in the University

There is a preference for the university to use AI in education. When asked about AI integration to education, the averages were between (3.05 ± 0.12 (SE) to 3.33 ± 0.10 (SE)) which is on the higher side (Table 6). The reasons students gave for this preference were AI acting as an additional teacher where they have no hesitation in asking any question and to ask at any time. The HEPI report also reported that 36% of their respondents highlighted the common use as "AI private tutor" (Freeman, 2024). A high number of students felt that AI can provide customized and personalized learning for them. A few students cited that AI provides equal access and opportunities to all students who want to learn. Many educators and language teachers advocate leveraging ChatGPT for teaching and learning, particularly using it to generate "raw" content or guide for teaching outlines or materials (Lo, 2023) create assessment tasks (Edmett et al., 2023, p. 58). A British Council report on AI and ELT highlighted the "potential to improve accessibility for some learners" (Edmett et al., 2023, p. 55).

What is significant here is that students felt the faceless and non-threatening disposition of ChatGPT offered them less anxiety and difficult compared to face to face classes with teachers and other students. The "instant feedback" and "equal access" to all are the other alluring qualities that make generative AI a valuable learning resource for students. ChatGPT as an intelligent "entity" that offers intelligent and conversational interaction with a learner is clearly an unrivalled "teacher" that students can turn to at any time today.

Generative AI Literacy and the Future

A number of students (13) indicated the prevalent use of AI in today's society and learning how to use AI is important for their future. Two students referred to the term, "AI literacy," as a positive aspect of its use in the university. The HEPI report also reported that 73% of their respondents expect to use AI after they finish their studies (Freeman, 2024). This is instructive to teachers and curriculum planners as it suggests that university education should include some form of AI literacy teaching. This is highly perceptive of these students as a largest survey (Grace et al., 2024) to date of 2,778 AI researchers predicted that generative AI will be able to automate "several economically very valuable tasks" (p. 4), such as creating "payment processing site from scratch and writing new songs" and many others within the next ten years. McKinsey (Manyika & Sneader, 2018) has already warned that roughly 800 million workers will be affected by automation by 2030. The Global Economics Analyst Report by Goldmann Sachs (Hatzius et al., 2023) estimated about 300 million jobs could be impacted by generative AI. Already, a study found at least 30% of workers are using generative AI for

communication tasks, efficiency, generating ideas for work, and improving the quality of their work (Cardon et al., 2023).

AI literacy can be understood as "a set of competencies that enables individuals to critically evaluate AI technologies, communicate and collaborate effectively with AI, and use AI as a tool online, at home, and in the workplace" (Long & Magerko, 2020, p. 2). This form of literacy has become even more critical for universities that are producing graduates for the future world of generative AI applications (Lodge et al., 2023). What used to be the prevalent traditional AI applications are fast becoming replaced by generative AI applications (Dasher, 2023). There are already generative AI applications in content creation, conversational agents, coding and software development, creative arts and design, scientific and medical applications, and educational assistive applications (Huang et al., 2024). What is more pertinent perhaps now is the shift from traditional AI literacy to literacy of generative AI, which is far more advanced and powerful in its capabilities. Universities are well advised to include generative AI literacy in their curriculum as well as having students use generative AI for their learning purposes.

Limitations

This study was based on convenient sampling with the participants from the researcher's classes. As such, the data suffers from lack of researcher distance in both the students' responses as well as researcher's interpretation of the data. While there is a fair representation of students' majors, but it can do with a larger sample size and representation of the rest of the schools at Rikkyo. Another limitation is the general wording of the questions that may elicit responses based on the understanding of the words. For example, one question, "become better as a student" (S5), can have a wider interpretation as originally conceived. While it is recognized that no wordings can be perfect but there are a couple of questions that could have been served better with more clarity. At any rate, the general idea and therefore data is captured for a general understanding of the generative AI situation at Rikkyo.

Conclusion

This study was set out based on my curiosity of my students' exposure to generative AI. The findings are evidently clear that students are very much aware of the existence of generative AI, though not of its potential nor distinction based on their reasons. Yet, almost half of them were already using generative AI in January 2024 with 11.7% from June 2023. Daily users also increased over time, by two and a half times after 7 months. The increasing number of users and frequency will only get higher with the positive experiential benefits that the students reported. While students do voice concerns, the positives seem to outweigh them, and it will become a matter of understanding how to use generative AI to mitigate the negative aspects.

Besides the obvious benefits of speed, on-demand, ease, sophistication and ability to produce finished pieces of work, generative AI presents an almost human-like entity that

students are able to communicate with. Whether it is to learn languages or content, there is no doubt that all these positive qualities led to students considering ChatGPT as a language partner and an additional tutor. This Natural Language Processing ability clearly offers student this other "person," who is more knowledgeable and capable, to learn from and even to get work done on their behalf. With generative AI, we will no longer experience the frustration with traditional AI conversational agents as such the chatbots that are available on service websites.

When you have an intelligent entity that has the ability to produce finished pieces of work at your disposal, the temptation to use it in place of your own effort will be difficult to refuse. And so, the concerns of students using it to produce their assignments and pass off as their own are real indeed. This study has shown that students will resort to generative AI to do their graded assignments when they are already predisposed to cheat or plagiarize. It is not that the emergence of generative AI will increase cheating or plagiarism cases but that it has become quicker and more sophisticated to do what they were predisposed to do anyway.

As a human invention and at its early stages of innovation, teething problems are to be expected and that is exactly what students discovered when they started to use ChatGPT-3 version during the period of investigation. Inaccuracies and misinformation have occurred with students waning their trust and their use have happened. But with future iterations of more advanced generations of generative AI, these issues will get less and less.

The advent of public access to generative AI is akin to the dawn of the internet age in the 1980s where the latter ushered in the proliferation of knowledge and global connectivity. It revolutionized the world in commerce, science, communication, industry and education. Generative AI perhaps has this potential to shake the world into another era of the way we live and make our living. This is where this study revealed that even our students are aware of this potential and seek literacy of this thing called AI. And as suggested in this paper, to shift it further into generative AI literacy where more and more traditional AI applications will be replaced by generative AI applications.

What this study has also revealed is that students are not gullible and persist in their use of generative AI despite their experience of inaccuracies and misinformation. They are also very much aware of plagiarism, copyright and cheating morals when using generative AI to do their work. This should allay the fears of educators that students are seduced by the promises of generative AI and blithely ignore the dangers thereof. Perhaps this is also where the literacy of AI will ensure that ethical and deeper understanding of the use of AI reaches to all when there is such a program in place.

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Appendix: Questionnaire items

S1. I believe the responses generated by ChatGPT are convincing.

S2. ChatGPT is a reliable source of information.

S3. I use ChatGPT to verify information.

S4. ChatGPT helps me identify inaccurate information.

S5. Using ChatGPT helps me become better as a student.

S6. Using ChatGPT helps me learn faster as a student.

S7. I prefer professors to use ChatGPT in their classes.

S8. It is important that universities integrate ChatGPT for the future.

S9. ChatGPT is an example of why we cannot keep doing things the old way for schools in the modern world.

S10. I think in the future, AI will replace teachers and professors in class.

For Questions 1 to 10, how many times did you use ChatGPT to:

Q1. Get content for your graded assignments?

Q2. Write your graded assignment?

Q3. Brainstorm ideas on a topic?

Q4. Correct your use of English?

Q5. Correct your use of Japanese?

Q6. Understand complex problems.

Q7. Understand difficult concepts?

Q8. Prepare for your examinations?

Q9. Do research for your graded assignments?

Q10. Deepen your knowledge on a topic?

Q11. Do any of your professors ban the use of ChatGPT for homework?

Q12. Do any of your professors ban the use of ChatGPT for graded assignments?

Q13. Do you think your professors are aware of you using ChatGPT in your homework?

Q14. Have you shared with your friend about the use of ChatGPT for homework?

Q15. Choose as many reasons as possible for using ChatGPT.

Q16. Please tick the AI you have used before.