STUDENT PERCEPTIONS OF AN AI EDUCATION UNIT: INSIGHTS FOR INTEGRATING AI DIGITAL LITERACY INTO THE CLASSROOM

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ABSTRACT

Recently, generative artificial intelligence (AI) has become easily accessible to the public. Issues of its use in educational settings have come to the fore in the field. This study investigates a specific unit that taught first and second-year Japanese university students about AI. A survey was used to ascertain their perceptions of the achievement of the unit goals, their relationship with this technology, and other feedback about the unit. The results showed a mostly positive evaluation of the unit. The final part of this paper provides suggestions for improving the unit and integrating digital literacy courses about AI in educational settings.

INTRODUCTION

In November of 2022, OpenAI released the large language model (LLM) ChatGPT to the public (OpenAI, 2022). LLMs are a form of generative artificial intelligence that respond to prompts from users (Kartik, 2025). Although not the first LLM for public consumption, ChatGPT was a leap forward compared to previous LLMs in that it provides human-like responses that users can adjust according to their desired parameters. Since its release, a number of competitors have hit the market including Microsoft's Copilot, Meta's Llama, Google's Gemini and a handful of others (Law, 2025). The effects of these LLMs have been felt far and wide throughout society including in the field of education. The debate of if and how to integrate LLMs into education is a contentious one. Some worry that LLMs have the potential to be abused by students or that LLMs may decrease critical thinking in learners. Others feel that LLMs should be included as they are a

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tool that students will inevitably come to interact with during their schooling and beyond.

At Kanda University of International Studies (KUIS), the latter opinion of the utility of LLMs and their need to be integrated into the curriculum led to the development of a learning unit explicitly designed to familiarize students with LLMs, specifically ChatGPT. This paper explores students' perceptions of this unit and its success in achieving its learning objectives. Not only does this paper provide insights into how students feel about learning to use LLMs, but it also can be used to reflect on the design of such courses to make them better for learners. The unit mainly focused on using ChatGPT and some image generators, but the results can be applied when teaching how to use any LLM.

LITERATURE REVIEW

Much of the research on LLMs and their use in education is part of a broader exploration of AI in education, as LLMs are a specific type of AI. The research has focused on how AI can be utilized by both teachers and students, issues of its application, and both teachers' and learners' perceptions of it. Research into the application of AI in education predates the release of ChatGPT but has shown a dramatic increase since 2018 (Celik et al., 2022). In 2019, Holmes et al. stated AI could serve two main purposes in education: supporting learning and providing insights into the learning processes. Before and since the release of ChatGPT, much of the research has focused on the former.

For teachers, the research has looked into their role in the age of AI and how they can utilize it. By integrating AI into education, learners can take a more proactive role while the teacher's role shifts more towards being a facilitator (Pokrivcakova, 2019). In terms of practice, Celik et al. (2022) emphasized three areas where AI is especially useful: planning, implementation and assessment. The authors went on to note that teachers need adequate training in its use and though educators have been involved in training AI, they should also take part in the "crucial decision-making processes on how (not) to develop AI systems for better teaching" (p. 626). In other words, a new role for educators is to advise AI companies in developing the technology for educational settings. In a more recent review on the integration of AI in education that summarized the perceptions of Chinese educators in higher education, Liu et al. (2023) reported similar findings as Celik et al.: that AI provides benefits in various aspects of the educator's practice and that educators and AI developers should collaborate. In a

reflective paper on using ChatGPT for lesson planning, Sykes (2023) emphasized its utility but noted the problem of false information and cautioned users to apply their own expertise and critical judgement. This sentiment was echoed by Al-Worafi et al. (2023) in a study that looked at teachers' perceptions of using AI for curriculum design. Thus, for teachers, AI can be a useful tool that must be used with caution while it is also altering how teachers develop courses.

Another area of research revolves around pedagogical opportunities and enhancements for students. AI, and by extension LLMs, can offer learners individualized instruction (Goksel & Bozkurt, 2019; Pokrivcakova, 2019; Zhou & Li, 2023). In regards to language learning, generative AI can provide focused, real-time feedback that helps students develop their language skills (Bonner et al., 2023; Songsiengchai et al., 2023). Learners perceive it to be especially useful for reading and writing development (Ali et al., 2023; Songsiengchai et al., 2023). This kind of learner-focused feedback can ultimately lead to students acting more autonomously in their education and being more engaged with the learning process overall.

More recently, Wang (2024) explored how students utilized ChatGPT for their writing and their perceptions of its use. Learners found it useful throughout the writing process, including for brainstorming ideas, organizing the essay, and making revisions. While participants reported benefits to using LLMs in the writing process, they also noted limitations, such as a loss of their own voices, false information, and ethical concerns connected to plagiarism. Ali et al. (2023) found similar results and noted that language learners felt it was more useful for reading and writing development than listening and speaking. However, since 2022, LLMs have been developed to interact orally and auditorily with users, so it could be that perceptions of its usefulness in these two language domains have changed. Similar to Wang and Ali et al., Woo et al. (2024) reported EFL students largely had a positive experience using LLMs in the writing process but reported negative experiences in terms of the logic, comprehensibility, and quality of the output. The authors recommended that incorporating LLMs should involve balancing their use with students' values and language abilities. Many of the issues raised in studies that investigate students' perceptions of AI in education point to a need to adequately train learners in their use.

BACKGROUND AND METHODOLOGY

After the release of ChatGPT in 2022, many educational institutions struggled to adapt to this new technology or to understand its effects on the

classroom. At KUIS, academic leadership and faculty members deemed LLMs a technology that should be integrated into classroom practice. Thus, a learning unit was developed by educators specializing in innovative technologies from the university's Center for Learning and Teaching Innovation to train students in the use of LLMs with a special focus on ChatGPT. The unit covers a broad range of topics and activities to help students better understand and utilize LLMs through short lectures, discussions and hands-on practice. The unit is better understood as a digital literacies course and although it is taught in English to English language learners, it is much more focused on the content rather than any specific language domain. The unit is taught in a reading and writing course which was selected because it is a course which all students at the university must take thereby providing training in the use of AI to all students.

Table 1 Overview of Module

Week 1	Week 2	Week 3	Week 4	Week 5
Intro to AI Generating AI art AI and ethics Intro to ChatGPT	Intro to ChatGPT continued ChatGPT activities Prompting practices	ChatGPT and prompting practice activities Final project overview and begin work	Final project work Explanation of reflection	Finish project and reflection Overview of uses and abuses of AI

Table 1 provides a brief overview of the unit. It begins with students sharing their knowledge of AI in a discussion and then learning about the history of AI and how various iterations of it have functioned. Students then utilize AI art generators and practice descriptive writing. Some lessons are spent investigating ethical issues surrounding AI, such as its use in education, ownership, misuse, and the creation of fake news. The remainder of the unit focuses on ChatGPT with students discussing what they know about it and learning about its history and how it works. Students engage in various activities such as having ChatGPT create poems, podcasts, codings, and summaries. This last part of the unit heavily focuses on writing descriptive prompts following a specific formula so that students may acquire good responses. Special emphasis is given to the ability of LLMs to revise the output through continued conversing. In the summative assessment of the unit, students create news articles using notes and descriptive prompts to

create a front page of a newspaper. After this, they finally submit a reflective writing piece in which they share their ideas of LLMs' strengths and weaknesses, any issues they encountered and if they think they will use them in the future. Because this unit was new, only five teachers in the writing course trialled it, including the author of this study. The teachers were allowed discretion in editing, adding and removing materials as well as in adjusting the pace of the unit.

This study utilized a survey to ascertain students' perceptions of the achievement of the unit goals and its overall usefulness using descriptive statistics. It used a four-point Likert scale of "Strongly Agree, Agree, Disagree, Strongly Disagree". The "Neutral" response was not used to avoid a possible middle response bias. The responses were recorded in a Google Form from 23 participants after the unit was completed. In addition to recording responses about the achievement of the unit goals, three questions also asked about students' relationship with generative AI and an open request asked for any comments students had about the unit. Respondents were entered into a raffle to win 500 yen Amazon gift cards for participating. In the form, students were informed their responses would be kept confidential and have no influence on the grade they received in the course. All of the content of the survey was presented in both Japanese and English while responses for the final comment section invited students to respond in either Japanese or English. Responses in Japanese were translated to English and are presented in this paper in English. The data was collected toward the end of January of 2024, about two months after students had finished the unit.

FINDINGS

The following section provides the results of the survey with a brief summary of each section of the survey and an emphasis on key findings. The data is presented in the same order as the survey was formatted. Table 2 shows responses to the first section that utilized the Likert scale. Table 3 displays students' responses in regards to their relationship with AI. Finally, Table 4 categorizes the feedback to the open question asking for comments about the unit.

Table 2 Survey Responses, Part 1

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree

1. My confidence in creating content using generative AI has increased after completing this unit.	3	18	2	0
2. I have a good understanding of the strengths and weaknesses of generative AI after studying this unit.	9	14	0	0
3. I can make ethical decisions about when to use generative AI in my writing projects.	6	17	0	0
4. I have acquired skills in creating prompts and refining AI output through conversation with ChatGPT.	6	16	1	0
5. I feel proficient in giving ChatGPT an identity to achieve my writing goals.	4	17	2	0

6. I am effective at setting constraints when using generative AI for my writing projects.	4	18	1	0
7. I am skilled at refining AI output through conversation and interaction.	3	18	2	0
8. Learning how to use image-based generators was a valuable addition to this unit.	4	17	1	1
9. The guidelines for clear input and practicing descriptive input have improved my use of image-based generators.	1	21	1	0
10. I have improved my English writing skills in this unit.	4	16	2	1

11. I have improved my English speaking skills in this unit.	0	18	3	2
12. I have improved my English listening skills in this unit.	1	15	6	1
13. I have improved my English reading skills in this unit.	1	20	1	1
14. I think through studying and learning about AI, I was able to improve my English skill.	2	20	1	0

Table 2 shows the statements and responses of students who participated in the study. The findings showed that students mostly felt the goals of the unit had been achieved and they gave an overall positive evaluation of the unit. Statements 1 through 4 focused on general goals of the unit. The results for the first statement show that the majority of students found this unit sufficient for increasing their confidence in using generative AI. In statements two and three, all the respondents felt that the unit had given them an idea of the strengths and weaknesses of LLMs and they also believed they had acquired more critical decision-making skills in regards to the ethical dimension of the use of LLMs. Only one respondent felt they had not acquired the prompting skills that were a key component of the unit while the majority agreed.

The formula for the prompt writing involved four steps: 1. give the LLM an identity, 2. state a clear objective, 3. set constraints on the LLM's output and 4. refine the output through continued conversation. Statements 5 to 7 focused on steps 1, 3, and 4. Most respondents felt they could effectively give ChatGPT an identity, but two respondents disagreed. The majority of

participants answered that they could effectively set constraints in their prompts, but one disagreed. In regards to refining responses, only two respondents disagreed, while the majority agreed, and three respondents strongly agreed. Statements 8 and 9 asked about the use of image-based generators in the unit. About 90% of respondents felt it was useful to utilize the image-based AI generators in the unit. One participant disagreed, and one strongly disagreed. In terms of the guidance the unit provided for writing clear, descriptive prompts for image generators, all but one respondent felt it improved their use of such generators.

The last statements dealt with language learning. Although this unit was not focused on any specific language domain, the need to reflect on language learning seemed important to explore, considering that the students are language learners. While most respondents felt they had improved their English language writing skills in some way, three responded negatively. 18 respondents felt their speaking skills had improved, while three disagreed and two strongly disagreed. About 70% of the participants felt the unit improved their listening skills, while 30% felt it did not help. Twenty-one of the respondents felt it improved their reading skills, while one disagreed and one strongly disagreed. All but one of the respondents felt they improved their English language skills through studying AI. Thus, while some students felt it did not help so much in specific areas, the overall sentiment was that it helped language acquisition in some way.

Table 3 Survey Results, Part 2

Statement	Yes	No
1.This was my first time studying about generative AI.	23	0
2. I used generative AI before this unit.	14	9
3. I have continued to use generative AI since completing this unit.	18	5

The next sections, with results found in Table 3, asked about participants' experiences with AI. Everyone responded that it was their first time to study about generative AI. This is not surprising considering the data was collected

at the end of 2023 and beginning of 2024, with LLMs like ChatGPT being quite novel. The unit was taught in the fall of 2023, and at about a 60/40 split, most of the students respondedthat they had not used generative AI before taking part in the unit. Finally, with about two months having elapsed between completing the unit and taking this survey, 18 respondents stated they had continued to use generative AI after the unit finished, while five said they had not.

The final section invited students to give any sort of feedback about the unit, which has been categorized in the table below.

Table 4 Survey Results, Part 3

Positive	Negative	Other

• General satisfaction with unit
• General positive attitude towards AI
	• Issues with unit
	  ○ Instruction on use
	  ○ Final project
	  ○ Time constraints
	  ○ Language learning
	  ○ Difficult content
	• General concerns about AI
		• No comment
		• Other

In terms of positive feedback, students expressed gratitude for learning how to use generative AI. They found the content interesting and one expressed enjoyment in discussing the output with classmates. Respondents found the

prompt writing formula to be valuable for using LLMs effectively. They also mentioned how ChatGPT is easy to use and convenient. Two noted its utility in the future with comments such as,

> "*The topic and the ability of using AI will be needed in my career so the unit was useful for me*."
> "*I found it an interesting topic as I think there will be an increasing number of situations where it will be useful in society going forward.*"

Overall, students' comments about the unit were mostly positive and only four of the respondents gave negative feedback about the content with one of those four also including positive feedback in their response.

In terms of negative comments, one mentioned the unit as being difficult but still being able to learn from it. In a similar vein, a student said using the image generators was challenging. Two had issues specifically with the final project, pointing out that the project did not help with language learning. One respondent went into detail to explain, "there is a slight lack of instructions on how to use ChatGPT." They suggested the unit would be better if it explained how to interface with ChatGPT. For example, they noted that not knowing how to create new chats in the application negatively affected the output received. The same respondent felt having more time to revise the output would improve the unit. Several students expressed what were classified as general concerns in regards to the reliability of LLMs' output. Of the comments classified as "Other," which covers five statements, three were "no comment," one thanked the teacher, and one was simply written "1."

DISCUSSION

The survey results showed that students had a very positive view of the unit as a whole. The majority of students felt the goals of the unit were achieved. This suggests that little or no changes need to be made to the unit. However, since its inception, the unit has undergone some changes to make it more comprehensible and to keep up to date with the advances in generative AI. In fact, this unit will most likely continue to be adjusted to stay relevant as LLM technology is further developed. The main goals of the unit were to make students more comfortable and confident in using generative AI, and most participants reported success in this area. As mentioned earlier in other studies, students often express concerns about AI output and how they may use it (Ali et al. 2023; Wang, 2024; Woo et al.

2024), and in the comments from this survey, some respondents noted similar issues. The responses to questions 2, 3, and 7 illustrate that through this unit, students felt they could make more informed decisions about the output and adjust it to their desires. The general concern with AI output demonstrates why units that teach how to use generative AI are valuable in the era of LLMs. Only one comment suggested that the unit could more explicitly teach how to use the ChatGPT interface. When utilizing generative AI or teaching how to use it, it is therefore important not to assume learners are familiar with the interface and to dedicate time to acquaint students with how it functions.

In regard to language learning, students generally felt the unit helped them in some way to develop their language abilities, which suggests the various activities are well-rounded in terms of providing opportunities for linguistic improvement. Much like previous studies mentioned in the last paragraph, students in this study rated it higher for reading and writing than listening and speaking. If curriculum developers decide the latter two areas should receive more attention, the unit could try to incorporate speaking generative AI technology and activities into the unit. More research into this area and its effects on language learning would be of value.

A more general question raised from this survey is whether the kind of information covered in this unit should be taught or not, with the data suggesting it should, as many participants reported it to be extremely useful. All of the respondents said this was their first time to formally study about generative AI, and the majority said they had continued to use it afterwards. It is reasonable to assume many students today utilize this technology since it has grown in popularity since its release. Rather than have students use AI unsupervised and with no guidance, a course that trains them to use it effectively and ethically is extremely worthwhile. The students in this study even noted so with many giving positive evaluations of the unit and two stating its utility for their futures.

Another question this topic brings forth is what role instructors should play in teaching about this technology. Because students found it to be especially useful, it suggests educators should take a more active role in teaching students how to use it and incorporating it more in lessons. In another study on this unit, data was collected to examine how teachers felt the goals were met and their general perceptions of it. In a presentation on the findings, Owens et al. (2024) reported that teachers found the goals were achieved for the most part, that language learning did occur and teachers gave general positive feedback about the content. Thus, some instructors also

believe this kind of knowledge is important to teach, further supporting the idea of explicitly training students in the use of generative AI.

The data from this study does not address this matter, but it is also important to consider *which* teachers provide this kind of instruction and *where* it is placed in the curriculum. As mentioned earlier, this unit was put into a reading and writing course for English language learners. It is questionable if this is the best choice for where to teach this and some teachers of the course have expressed skepticism towards the unit (Owens et al. 2024). In the context of this study, one issue is clearly the lack of content expertise of language teachers in this area. It also calls into question whether some content topics, such as ethical issues, would be better suited to be explored and discussed in students' first language. It is therefore important for each institution to carefully consider how to implement content that seeks to develop students' digital literacy with generative AI.

There are some important limitations to note from this study. The first concerns the teachers' familiarity with AI, specifically with LLMs, as they taught this unit. Their experiences and understanding affected how they taught the course and, therefore, may have influenced students' perceptions of it. Additionally, the teachers had some autonomy in how they taught this unit and may have taken certain liberties that influenced students' responses to the survey. Moreover, the sample size for the study was quite small, so it only provides a few insights into the unit. The confidential nature of the survey also makes it impossible to ascertain the number of students who responded across the five classes in which the survey was given, and it may only be representative of a few classes. Finally, the author's involvement in teaching this unit firsthand may have influenced the data collected and the interpretation of the data in this study.

CONCLUSION

This paper looked at students' views on how well a unit teaching about the use of LLMs was able to meet its goals. The findings showed that respondents generally felt the goals were achieved. They also showed that participants felt English language learning occurred, slightly more so in the domains of writing and reading than listening and speaking. Participants reported that the unit was beneficial and useful. A few suggestions were made for making the unit better in terms of content and language learning. Finally, recommendations were made suggesting integrating the training in the use of generative AI into educational settings with special consideration given to who should teach it and where it should be put in the curriculum.

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