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Perceptions of the Acceptable and Unacceptable Uses of Generative AI Among University Students and Teachers

Joseph V. Dias

Introduction

Emergence of a promise and a threat

Two years before the appearance of ChatGPT (ChatGPT, n.d.) on the world stage, West and Allen (2020) offered their speculations about the possible repercussions, both positive and negative, of AI in various sectors, including education. They noted that it had the potential to help manage school enrollment decisions, personalize instruction, track students who were “at risk,” and (ominously) protect against school violence by monitoring AI-linked video cameras. They saw the possible dangers as threats to student privacy and the existence of bias in educational algorithms.

At the outset of the 2023 Academic year in Japan, schools and universities were grappling with the ramifications of the sudden introduction of this groundbreaking tool, ChatGPT, that was readily accessible to both students and teachers and, while holding the promise of providing numerous benefits in the field of education, there was also a dread among educators that the technology would rapidly become an instrument for academic dishonesty that would evade detection (Saccetti, 2021; Smith, 2024).

What exactly is Generative AI

OpenAI’s ChatGPT and other generative AI (henceforth “GenAI”) chatbots can produce text that are often difficult, if not impossible, to distinguish from that of a human. Before the widespread use of these tools came about, AI was generally understood as referring to machine-learning models that could be “taught” to make predictions based on data that was fed to it. Millions of examples helped

the model to, for example, predict whether an X-ray indicated that a patient had a tumor. We can conceive of generative AI, "as a machine-learning model that is trained to create new data, rather than making a prediction about a specific dataset; ...a generative AI system is one that learns to generate more objects that look like the data it was trained on" (Explained: Generative AI, 2023).

Difficulty in creating standards for GenAI use

Due to the ever-changing nature of GenAI, developing standards for acceptable and unacceptable uses has been frustrating in all academic fields, not to mention in the commercial and political spheres outside of academia. Problems in establishing clear guidelines include:

- * Insufficient knowledge of the technology by those who need to create standards whether they be politicians, business leaders, or educators.
- * A lack of agreement on what "acceptable use" might mean.
- * The speed at which generative AI is developing (Since ChatGPT first became available in late 2022, new iterations of GenAI technology have been released several times each month; see Fig. 1).

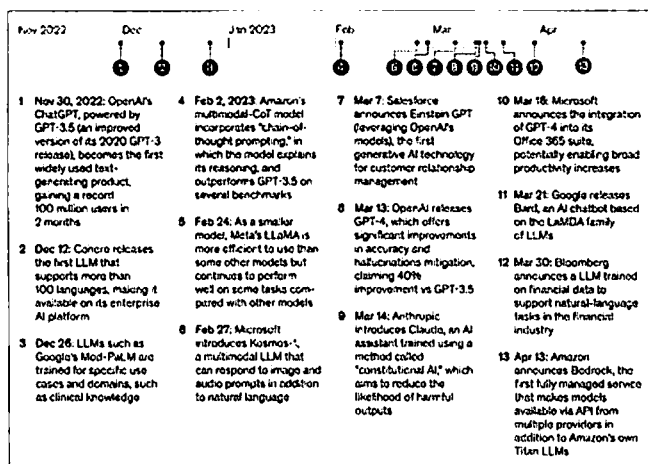


Fig. 1: Chart showing the rapid pace of development of generative AI (from McKinsey & Company, 2024)

Scrambling to meet the challenge

The coordinators of the Integrated English Program (an intensive, academic program for freshman and sophomore English majors at Aoyama Gakuin University) saw the main choices for how to address the issues as 1) ignoring the new technology; 2) preventing (at least, trying to prevent) students from using it by introducing penalties for transgressors; or 3) setting clear guidelines on acceptable uses and teaching students how to use these powerful tools constructively without over-relying on them to the extent that they fail to a) develop effective English communication skills, and b) maintain academic integrity.

It was obvious that the first option was not practical as students surely would be embracing the technology. While the second option was tempting since our program used a similar approach to address the problem of “cut and paste” plagiarism from Web sources, with mixed results (Dias, 2016), we knew that we were dealing with a far more wily adversary. Indeed, we looked at ChatGPT and other GenAI tools as our nemesis initially.

The third option, setting clear guidelines and teaching “AI literacy,” sounded like the most logical and sensible way to proceed were it not for a fatal flaw: We had, at that point, no idea what those guidelines should be and, more fundamentally, we were baffled by the prospect of teaching “proper use” of these tools when we ourselves had insufficient knowledge of how to harness them, fearing that it would be a slippery slope from students using them to polish their writing or for generating ideas, to the generation of entire essays, homework assignments, and presentations masquerading as their own. We also knew that teachers in our program (almost entirely adjuncts), at that point, did not have enough experience exploring the potential of the technology to teach “fair use” scenarios.

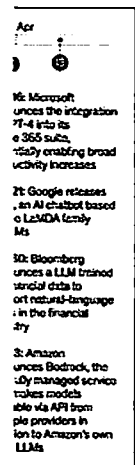
There was a multi-pronged fourth option that was not initially apparent, which we came to adopt at the beginning of the 2023 academic year, just five short months after the debut of ChatGPT. That “eyes wide open” approach recognized that there would be a drastically altered educational landscape that students and teachers would have to adapt to. It involved:

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- 1) informing teachers and students in the program of the university's policy on the use of GenAI in education and research (Fig. 2). The directive, although not specific about what appropriate uses might be, seemed to be a reasonable compromise between outright prohibition of its use and no restrictions whatsoever.

For the time being, the use of ChatGPT and other generative AI in university education and research will be based on the instructions of the respective class instructors. However, it is not permitted to use sentences, calculation results, program source code, etc. generated by ChatGPT or other generative AI as if they were generated by oneself in university education or research. The university will continue to collect information on social trends including the development of generative AI, responses of higher education institutions in Japan and abroad, and opinions within the university, and will continue to review and consider its effective use and responses in education and research.

Fig 2: Communication on ChatGPT and other Generative AI sent out by President Hiroshi Sakamoto, April 25, 2023.

[Note that a revised policy, put forward by newly appointed President Inazumi from April 2024, is much clearer about the dangers and consequences of clumsy applications of GenAI.]

- 2) Directly addressing with adjunct instructors, at the April 2023 Integrated English Program teacher orientation, what changes in the learning/ teaching environment GenAI tools posed. For example, they were shown essays, journal entries, and scripts for presentations that we know had been written by students in our program alongside examples that had been generated by ChatGPT. Even though the chatbot-produced texts came from interactions with the now outdated GPT-3.5, teachers were unable to accurately tell the difference between our students' output and the machine-generated ones. Teachers were also shown how tweaks to tasks included in IE Program courses, that were introduced to thwart plagiarism from Web sources (Fig. 3), might need to be further reconceptualized so that AI Chatbots would be less able to generate them.

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April 2023 Integrated in the learning/ teaching, they were shown s that we know had e examples that had atbot-produced texts T-3.5, teachers were students' output and own how tweaks to ntroduced to thwart be further reconcept-nerate them.



You

I am not very confident but I'm curious and adventurous. My adventurousness gets me into trouble sometimes. I'm a pretty good problem solver but I need my friends to help me compensate for my shortcomings. Together we can come out on top in the end. Which character in Harry Potter am I most like and why? Compare and contrast us.



ChatGPT

Based on your description, you share some traits with Ron Weasley. Ron is known for his adventurous spirit and willingness to take risks, as seen in various instances throughout the Harry Potter series. He's not always the most confident character, especially when compared to his friends Harry and Hermione, but he makes up for it with his loyalty, bravery, and problem-solving skills.

Similarities:

1. **Adventurous Spirit:** Both you and Ron share a sense of curiosity and adventure, which can sometimes lead to trouble but also adds excitement to your lives.
2. **Not Very Confident:** Ron struggles with confidence at times, and you mentioned that you're not very confident either. This shared characteristic may make it easier for you to relate to Ron's experiences and growth throughout the series.
3. **Reliance on Friends:** Ron heavily relies on his friends, especially Harry and Hermione, to compensate for his shortcomings. Similarly, you mentioned needing your friends to help you compensate for your own weaknesses.
4. **Problem Solver:** Ron, despite his occasional lack of confidence, is a good problem solver. He often contributes valuable ideas and strategies, and you mentioned being a pretty good problem solver yourself.

Fig. 3: Demonstration for IE Program teachers showing how students using ChatGPT with an effective prompt might easily generate an essay focusing on which Harry Potter character most closely resembles the student in personality and temperament; a personalization of the book report task that had previously been developed to prevent "copy and paste" plagiarism. ChatGPT completed the task convincingly in seconds.

- 3) Emphasizing that, particularly until clear fair use standards for GenAI use could be created, we would need to promote process over product, have students do more writing and presentation preparation in the classroom, and, importantly, make students less likely to resort to improper uses of GenAI because newly developed tasks would require more critical thinking and, possibly, performance, with less reliance on notes or scripts. At the April 2023 teacher orientation, instructors who had already been incorporating performance, critical thinking, and inherently motivating tasks prominently in their classes were asked to give presentations to demonstrate their techniques so that others could learn from them.

Investigating how our teachers and students use GenAI

In order to move forward toward eventually teaching the AI literacy skills that we know students will require—just as much as general literacy skills, computer literacy, and intercultural competence—in order to function in the 21st century, we decided to conduct a series of surveys that supplemented our own observations and what we could learn from the trickle of messages we received from teachers informing us of cases of suspected improper GenAI use when they requested our feedback on how to deal with them. By relying simply on anecdotal accounts (mostly negative) of student GenAI use or abuse, we risked getting a skewed impression and not learning about legitimate, and even ingenious, uses of the technology. Like Saccenti et al. (2024), we hoped to “distinguish positive use cases, areas requiring caution, explicit limitations of ChatGPT, and cases of unethical use.” Like them we believed that reasonable and consistent guidelines would be essential to ensure that it be used ethically and effectively. The survey would be a means toward that end.

The rest of this paper describes what precisely we wished to learn through the survey, how it was conducted, its results, the interpretation of those results, and pedagogical implications. Due to space limitations, only the survey taken by students will be presented in detail and analyzed.

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Setting up a survey for students about GenAI use

During a one-week period in November 2023, an online SurveyMonkey survey (SurveyMonkey, n.d.) was administered to two classes of students enrolled in Integrated English Program seminars in the English Department at Aoyama Gakuin University, in addition to 4 graduate students from the same department enrolled in a Master’s course. A total of 55 students completed the survey: 51 undergraduates and 4 graduate students.

As the particular issues salient to using GenAI were still being worked out, we felt it to be prudent to conduct this questionnaire as a pilot survey before administering a more refined version of it to hundreds of students across the entire department. The two seminar classes were selected mainly because, in the three basic IE classes (Core, Writing, and Active Listening), class time is usually fully occupied with set tasks, whereas there is more flexibility regarding how the time is spent in seminars, so a survey conducted during class time could be better accommodated. The graduate students were not in an in tact class; an email was forwarded to them by a graduate student leader requesting their voluntary participation. There were 27 questions in the survey over 6 pages and it was estimated that it would take no more than 15 minutes to complete.

The purpose of the pilot survey was to help us gain insights into these research questions:

- 1) What kinds of GenAI tools were being used and for what purpose?
- 2) How are they being used in both academic and non-academic contexts?
- 3) What are the students’ attitudes toward GenAI?
- 4) Do they think the university’s policy regarding GenAI is fair and appropriate?
- 5) Have they noticed a positive impact on their academic performance or engagement due to GenAI use?

Results of survey administered to students

Basic demographics

The number of students surveyed at each level were...

1st year undergraduate = 24

2nd year undergraduate	=	15
3rd year undergraduate	=	8
4th year undergraduate	=	4
M.A. Program Grad Ss	=	4

The majority of the graduate students (3 out of 4) and more than half of the undergraduates had experience living abroad.

AI tools being used

Among the students who answered the question inquiring about the GenAI tools that they had experience using, 66% (33 out of 50) reported having, at least, tried ChatGPT. These are the other AI-powered tools cited as having been experimented with, in order of frequency of mention:

- Translation apps [Deepl and Google Translate] (13)
- Grammarly (4)
- Bard (3)
- StableDiffusion (1)
- Mid Journey (1)
- Copilot in Bing (1)
- DMM英会話 AI (1)
- NovelAI (1)
- Scholarcy (1)
- Mendeley (1)
- Consensus (1)

It should be noted that the translation sites Google Translate and Deepl have AI behind them but they are not technically GenAI. Clearly, among the AI tools that the students make use of, they are the most often mentioned. When asked how they used the translation tools, none of them said it was to "To translate an ENTIRE essay or other assignment into English before submitting it." Instead, two of them said it was to "to check whether what they wrote in English would be comprehensible (by doing a "reverse translation" into Japanese)" and another said that it was "to translate PARTS OF essays or assignments (for example, just

the language they did not know how to express in English).

Grammarly (Grammarly: free AI writing assistance, n.d.) has been used by students and teachers in the AGU English department for many years to make mechanical improvements to written products and to check for possible plagiarism. Soon after OpenAI launched ChatGPT, it added an AI Writing Assistant which purports to “quickly turn keywords into thoughtful articles, product language, and social media copy.”

StableDiffusion and Mid Journey are AI image generators, so students may be using them either for their own entertainment or in their classes to illustrate slides used in presentations.

DMM English Conversation AI (DMM Eikaiwa, n.d.) stands out as the only site listed that is dedicated to the development of English conversation skills, allowing them to practice, with an AI Chatbot, conversation in various business, travel, and everyday scenarios. Curiously, students did not mention the newly introduced AI Chatbot nicknamed MiMi (Furuyama, 2024) that was embedded in an extensive listening system (English Central) that we are using in the required Active Listening course they had been enrolled in.

Scholarcy (Scholarcy - Knowledge made simple, n.d.), NovelAI (NovelAI - the AI storyteller., n.d.), and Consensus (Consensus: AI-powered academic search engine, 2024, September 14) were all mentioned by graduate students as research aids, with Scholarcy allowing users to summarize papers, articles, textbooks, and even videos. Consensus claims to be able to “synthesize both topic-level and [academic] paper-level insights.”

Course-related usage of GenAI tools

Of the list of items presented to students that may constitute both legitimate, inappropriate, and borderline uses of GenAI (along with other practices that may impact whether teachers consider academic dishonesty to have been committed), respondents who answered the question admitted to the following, in descending order:

- Using AI tools to check grammar and/or spelling of written assignments or scripts (81.58%)

- Using AI tools to have difficult concepts explained in more understandable ways (70.21%)
- Using AI tools to research topics (65.85%)
- Using AI tools to summarize long texts (just to better comprehend them rather than to submit as one's own written work) (52.38%)
- Using AI tools to identify themes, metaphors or other literary features (50%)

A minority of the students confessed to engaging in practices that most teachers who were surveyed agreed were among the most egregious, which included:

- Using generative AI (or simply Internet copying and pasting) for just PART OF an essay or other written work (41.94)
- Using generative AI (or just Internet copying and pasting) to create a COMPLETE written or oral assignment (36.36)

	ME	MY CLASSMATES	TOTAL RESPONDENTS
Use AI tools to have difficult concepts explained to you in ways you can better understand	70.21% 33	68.09% 32	47
Use AI tools to summarize long texts (just to better comprehend them rather than to submit as one's own written work)	52.38% 22	73.81% 31	42
Use AI tools to identify themes, metaphors or other literary features of stories or poems	50.00% 15	80.00% 24	30
Use AI tools to research topics	65.85% 27	70.73% 29	41
Use AI tools to create PPTs / Google Slide presentations	17.65% 3	94.12% 16	17
Use AI tools to generate ideas for written assignments or presentations	39.39% 13	78.79% 26	33
Use AI tools to check grammar and/or spelling of written assignments or scripts	81.58% 31	71.05% 27	38
Use generative AI (or just Internet copying and pasting) to create a COMPLETE written or oral assignment	36.36% 8	88.38% 19	22
Use generative AI (or simply Internet copying and pasting) for just PART OF an essay or other written work	41.94% 13	80.65% 25	31
Submit another student's work as one's own--with or without the other student's knowledge	28.57% 4	78.57% 11	14
Cut and paste a paper together using online materials without appropriate citations of sources	26.32% 5	78.96% 15	19
Use Cliff's Notes, Spark Notes, or similar resources to avoid reading a book	45.00% 9	80.00% 16	20

Fig. 4: Responses to the question: Which of these have you (or your classmates) done? [Mark all that apply]

- Using AI tools to create PPTs / Google Slide presentations (17.65%)

Interestingly, only a minority of the students (39.39%) were using GenAI for one task that many teachers believe to be a legitimate use of it: To generate ideas for written assignments or presentations.

As we also found when surveying our students' efforts to avoid plagiarism (or the lack thereof) 8 years ago (Dias, 2016), there was a tendency to identify *classmates* as partaking in certain categories of academic dishonesty (such as the use of GenAI to produce PPT / Google Slide presentations) rather than claiming personal experience with it.

Use of GenAI tools in other than course-related purposes

Since only a year had elapsed since the introduction of ChatGPT at the time the survey was administered, it is not surprising that the most common non-academic use of GenAI tool was for entertainment. The use of these tools “for fun,” however, would not preclude the possibility that, at the same time, they were getting hints about how to apply them to their studies. As can be seen in Fig. 5, undergraduates were using them for a wider range of purposes, which included, assistance in writing social media posts and text messages.

	Undergraduates		Graduates	
For fun	48.89%	22	75.00%	3
When applying for jobs (helping to write CVs or application forms)	24.44%	11	25.00%	1
For writing social media posts	8.89%	4	0.00%	0
For writing emails	20.00%	9	25.00%	1
For writing text messages	20.00%	9	0.00%	0

Fig. 5: Students responding to the question: “Apart from using generative AI tools for class-related assignments, how else do you use them?” [Mark all that apply].

Student attitudes toward GenAI

The attitudes of both undergraduates and graduates toward GenAI was divided between “welcoming it whole-heartedly” and “having deep misgivings” about it (Fig. 6). There were a few undergraduates who went as far as saying they

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TOTAL RESPONDENTS
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29 41
16 17
26 33
27 38
19 22
25 31
11 14
15 19
16 20
classmates) done?

had such deep misgivings that they wished it would go away.

	Undergraduates		Graduates	
▼ I welcome them whole-heartedly.	10.64%	5	25.00%	1
▼ I welcome them with some reservations.	72.31%	34	50.00%	2
▼ I have deep misgivings about them.	12.77%	6	25.00%	1
▼ I have such deep misgivings about them that I wish they would just go away.	4.26%	2	0.00%	0

Fig. 6: Students responding to the question: Apart from using generative AI tools for class-related assignments, how else do you use them? [Mark all that apply].

Opinions about the appropriacy of the university's GenAI policy

Graduate students were perfectly divided over whether they believed the university's policy on the use of GenAI was appropriate, whereas undergraduates predominantly supported the policy, although 33% of them were unsure about it (Fig. 7).

Two of the undergraduates commented that it was important to use these "kind of tools effectively to make our skills upgrade," implying that the university should be less restrictive on their use. However, another undergraduate expressed almost the opposite sentiment, saying, in a rather "teacherly" way...

...while generative AI may increase work efficiency in certain situations without entirely taking away the authenticity of the content, I believe students nowadays are generally making it too much of a habit to depend on AI, and thus it is not fair to those who are actually putting in the effort to produce original content. Therefore, I feel that the University can implement stricter rules, although it may be hard to identify whether people actually follow them.

Graduate students opposed the university's plagiarism policy for being too strict or not strict enough. A student who fell into the former category opined in this way...

I am not sure what the ethical problems of using ChatGPT to rewrite sentences that I have written to make it "better" is (how is this different from asking my advisor or my friends for suggestions?). This policy seems to prohibit these uses too.

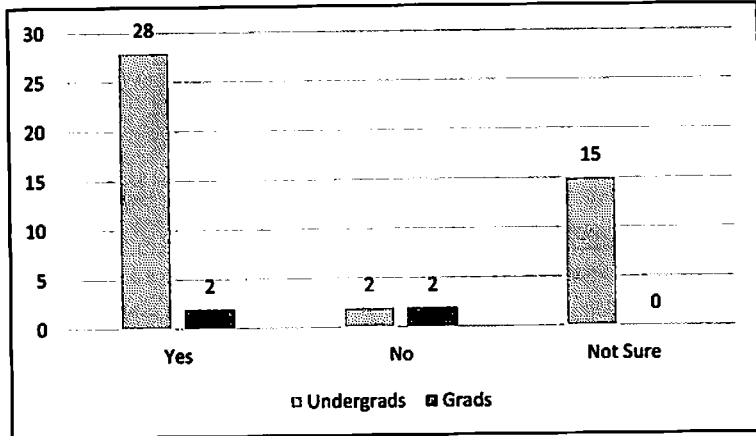


Fig. 7: Comparison of undergraduate and graduate students' responses to the question: "Do you think the university's approach to the use of generative AI is appropriate?"

A graduate student who believed, perhaps, that the GenAI policy should have more teeth to it, expressed this opinion...

For students of the English department, the usage of generative AI should be limited to grammar checking or coming up with ideas rather than using them as a test cheating devise or a tool to get rid of homework.

Perception that GenAI tools have positive impact on their performance

When asked if AI tools for learning led to any positive changes in their academic performance, the largest percentage of both graduates and undergraduates answered in the affirmative (Fig. 7) although almost an equal number of the latter said they were not sure.

Undergrads	Graduates
5	25.00%
34	50.00%
6	25.00%
2	0.00%

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University's GenAI

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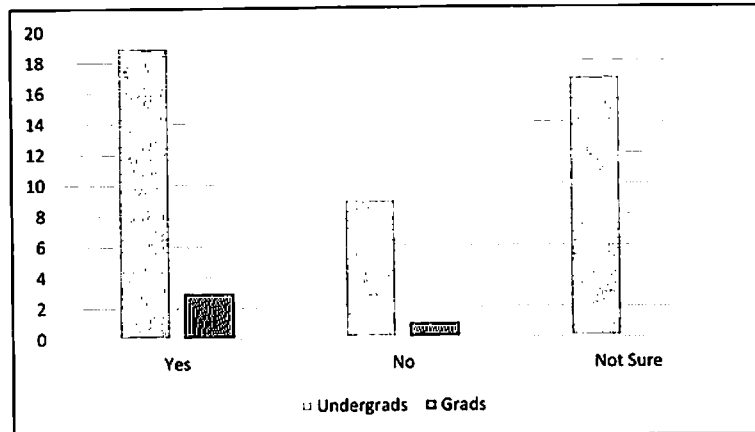


Fig. 8: Comparison of undergraduate and graduate students' response to the question: "Do you think the university's approach to the use of generative AI is appropriate?"

Those who felt that AI tools had been a positive force in their academic life cited the following (the items have been grouped into themed categories):

Facilitator for self-expression

- I think it helps me grasp and idea of what I want to write or how I want to say something.

Vocabulary expansion

- I feel like I've expanded my vocabulary.
- Coming up with synonyms.

Fewer errors

- Reduce the risk to make grammatical mistakes.

Aid for comprehending difficult texts

- Sometimes the stuff we read is too hard and I can't fully understand it. AI has helped me understand some of those works
- Picking up ideas quickly.

Helpfulness of writing prompts

- We can learn how to describe some situations in English.

Ambiguous (as they may suggest questionable usages)

- By using AI makes it easier to research.

- Sometimes it can provide us ideas
- We can write efficiently

The final category shows the need for follow-up interviews that may untangle what some of the more ambiguous items might mean to students in practice.

Ethical considerations

There were 18 responses to the question: "Are there any ethical concerns or considerations regarding students' use of AI tools in education that you think should be addressed? If so, what are they?" Half of the students reported no particular ethical dilemmas. One respondent (the only graduate student to offer a comment) held a much wider perspective and understanding of the moral issues involved in GenAI use. So, that response will be presented in its entirety:

The focus is typically on how students and researchers can or should use AI technology. Although this is important, these technologies rely on exploitation of workers and artists, as well as impacts on the environment, and we need to address that. Many companies that develop these tools also have military contracts too, but this is not something I often hear discussed. We must address these "political" dimensions of AI services going forward.

One serious ethical consideration not brought up by students in the survey is the fact that there has been a widely reported bias against non-native English speakers in the detection software evaluating whether ChatGPT, or another GenAI tool, was used to generate a given text. This frequently leads to work being unjustly flagged as having been plagiarized. They score lower since the algorithm places a high value on common perplexity measures such as "lexical richness, lexical diversity, syntactic complexity, and grammatical complexity" of a text (AI-Detectors Biased Against Non-Native English Writers, 2023).

Should AI literacy be part of their education

When asked whether AI literacy should be a part of their education, all of the graduate students answered in the affirmative and the vast majority of the undergraduates (73%) did so as well (Fig. 9). Two of the more thoughtful responses expressed concern that if students relied too heavily on AI tools they would not try to learn on their own.

Several of the students offered long thoughtful justifications for the need for AI literacy training. Some noted the flawed responses and “hallucinations” (IBM, 2024) that AI Chatbots sometimes generate, while others cited the importance of being efficient and of keeping up with the times (E.g., “To show the positive potential is good for technical progress.”). One student brought up the fact that improper use of it can affect one’s grades if they are suspected of having made improper use of GenAI. Some students, such as the one quoted below, considered GenAI chatbots as just part of a toolkit and, like all tools, some training and practice would be required before mastery could be achieved:

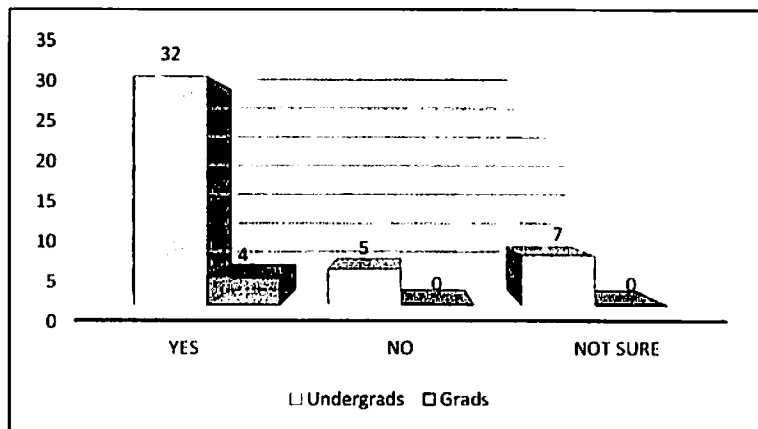


Fig. 9: Students respond to the question: “Do you think the university should train students in how to use AI tools effectively for learning?”

Training students will be important to both allow them to utilise them as well as prevent them from abusing them. The current status is, that they are not always reliable. Knowing when to use and not to use, or how to use them (or not), I think, is important. In a sense, I take them as not too different from other resources we already had, including dictionaries, Wikipedia or YouTube videos that explain certain "academic" topics.

Conclusion and Discussion

We will go through each of the research questions that this survey study sought to answer and explore the implications of the findings.

1) What kinds of GenAI tools were being used and for what purpose?

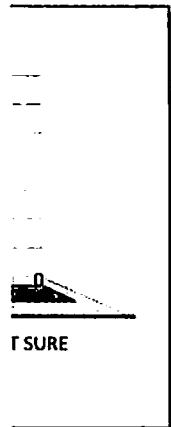
Students were found to be experimenting with, if not using regularly, at least 10 GenAI tools, with the most used tool, not surprisingly, ChatGPT. Although not strictly GenAI powered, translation sites such as DeepL and Google Translate were the next most frequently visited. Tools used to reduce mechanical errors in texts, such as Grammarly, were also in the mix. It should be noted that GenAI has insinuated itself into many systems that were not originally designed with GenAI in mind. Grammarly falls into that category, as does Copilot (which is an AI assistant operating alongside Microsoft 365 apps), allowing the user to search for particular information, generate text—such as summaries and emails—and create images based on text prompts.

Students may naturally think that if the new GenAI capability is embedded in an app or website they have already been using, they can freely make use of all of its features without concern about crossing the border into territory of questionable academic integrity. Opting out of the GenAI features is not always a straightforward matter, as evidenced by the frequency of pleas such as "Can I opt-out of use of GPT / AI on my 365 subscription" in the Microsoft Community Forum (Adam740, n.d.).

Graduate students were making productive use of an array of research tools backed by GenAI, including Scholarcy, Consensus (an AI-powered academic search engine), and Mendeley (2024), a citation manager that makes use of

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GenAI to search for relevant academic articles.

Just one year after the appearance of ChatCPT, students were already leveraging a wide variety of GenAI tools or familiar apps that suddenly had GenAI capabilities added.

2) How are they being used in both academic and non-academic contexts?

It was gratifying to find that students were more likely to use GenAI for class-related activities that teachers found acceptable (based on the survey given to teachers but not reported in detail here) than egregious uses. Those "green list" uses include:

- to identify themes, metaphors or other literary features of stories or poems
- to research topics
- to check grammar and/or spelling of written assignments or scripts

However, a minority self-confessed to...

- using generative AI (or simply Internet copying and pasting) for just PART OF or ALL of an essay or other written work

Students played with GenAI tools in their leisure time as well, particularly with AI image generators, as well as using the tools to write emails and social media posts, and even in the job application process. It is likely that simple "playing" with these technologies would give the students hints about how they can be useful in educational and vocational contexts.

3) What are the students' attitudes toward GenAI?

Considering that there were few rules and guidelines for the fair use of GenAI tool, it is not surprising in this atmosphere of uncertainty that the attitudes of the students toward GenAI was divided between "welcoming it whole-heartedly" and "having deep misgivings." That divide in attitudes was prominent in our teachers as well. Hopefully, the gradual development of AI literacy, paired with unambiguous policies, will help attitudes trend in the positive direction.

4) Do they think the university's policy regarding GenAI is fair and appropriate?

Graduate students seemed to be more frustrated with the vagueness of the then policy regarding the use of GenAI, perhaps because they were well aware of GenAI-powered research aids, but did not know if use of them might be construed as an academic violation. There was a divide between those who wished for stricter guidelines and those who thought they should be more lenient. The lack of clarity, leading to uncertainties in how their work would be evaluated, no doubt contributed to mixed attitudes.

5) Have they noticed a positive impact on their academic performance or engagement due to the use of GenAI technologies.

It was curious that, despite the divergent attitudes, lack of whole-hearted satisfaction with the policy stance, and scarce opportunities to learn AI literacy skills from teachers, both the graduates and undergraduates felt rather strongly that the tools had played a positive role in enhancing their performance. Of course, some students may have meant that "shortcuts" they had taken in assignments that relied heavily on GenAI apps or sites went undetected by teachers and were handsomely awarded with high marks. Without further inquiry, it is difficult to know how to interpret it. However, many students were specific about the skills or competencies they believed benefitted from GenAI tools, such as AI chatbots that helped a student to "grasp an idea of what [they] want[ed] to write and how [they] wanted to say something." Assistance comprehending difficult texts, that they may previously have given up on, was also cited as being helpful. Struggling to compose useful prompts made one student think that their ability to describe some situations in English had improved. These unanticipated results were reassuring.

Pedagogical implications

In detailed and thoughtful comments, several survey respondents offered arguments for the need for AI literacy training. Our survey of teachers in our program (also administered precisely one year after OpenAI released ChatGPT)

showed that they were aware of even more GenAI-powered tools than the students, although they were not using them as regularly.

The importance of holding AI literacy training sessions for teachers (Sullivan et al., 2024) and students (Pegrum, M., 2024, August 22) is becoming increasingly recognized. Our next teacher orientations will showcase prominently techniques for developing AI literacy, something that will always be a moving target as the AI models change and become ever more sophisticated and powerful.

Some tasks that teach about how the tools can be used, and draw on critical thinking skills at the same time, might include:

- Having a contest to see which student can find the most GenAI-created “hallucinations” (inaccuracies or made up information disguised as fact in GenAI chatbot output) in a set period of time
- Asking students to speculate on whether a text was created by a human or a GenAI Chatbot
- Create a ghost story using a GenAI chatbot that is scarier than those generated by classmates. Then, comparing it to an Edgar Allan Poe story for common and divergent features.
- Have an AI image generator create images of people of various ethnic groups to see whether there are stereotypical representations and embedded biases.

Another possibility is to have students refer to the useful checklist in Fig. 10 to come up with the “perfect prompt,” which should, ideally, have most of the 6 elements shown in the example prompt (Fig. 11).

Clear communication between the human and the AI Chatbot is essential for a desirable product. It may be necessary to become as much of a low-context communicator as possible, not worrying about belaboring a point. The prompt should have a clearly articulated goal, with relevant details provided to establish context. Examples of points one wants to have included should be specified. A character perspective (persona) may help the Chatbot to provide a more focused, cohesive text. There are many possible formats to choose from, from bullet points to sonnet, or a blurb on the back of a best-selling novel. Finally, the tone

indicates how one wants emotion to be conveyed through the language.

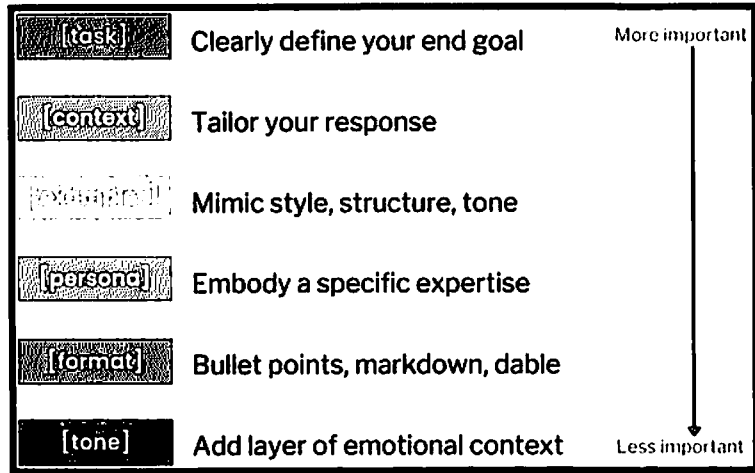


Fig. 10: The 6-step prompt checklist (The rundown AI, 2022)

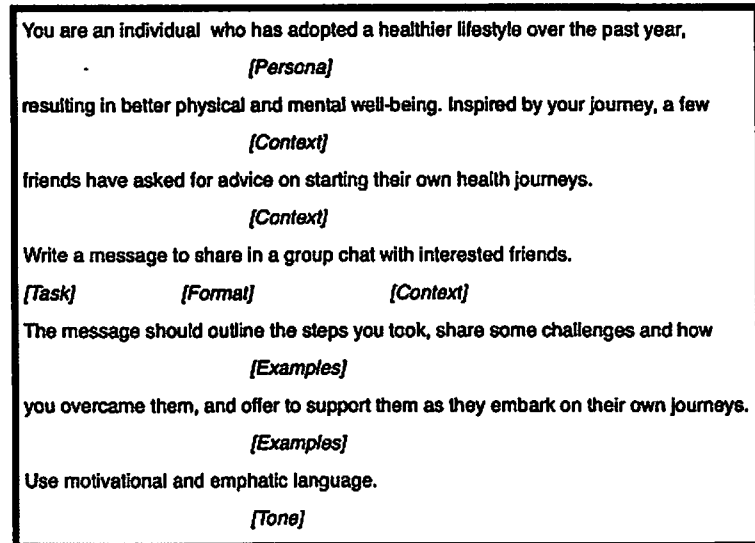


Fig. 11: Example of a perfect prompt for generating a desirable GenAI response (Delta, 2024).

Call for a wider perspective

As we saw in the “ethical considerations” section of this paper, some students were, admirably, thinking deeply about what GenAI might mean for environmental and social justice issues.

AI literacy among our students will not be a luxury in the future as their worklife, social life, and family life will be impacted by it in ways that we cannot even imagine now. It is imperative that students and all others in society understand that GenAI will influence, for better and for worse, how they study, how they will be evaluated, and how they can stay competitive in the job market. Students and academics need guardrails on the way they use GenAI in order to maintain academic integrity, exercise respect the intellectual property of others, and make sure basic communication and cognitive skills do not atrophy from disuse. It is necessary for teachers to help them learn to leverage it to achieve their personal goals.

They also must realize that engaging with GenAI can help them appreciate its role not only in the ivory tower but in the wider geopolitical scheme of things. In a United Nations University talk attended by several AGU students and myself recently, we heard Jimena Sofía Viveros Álvarez (2024, July 11), a member of the “Risks and challenges” subgroup of the United Nations Advisory Board tasked with creating a newly issued report “Governing AI for humanity” (2024).

She spoke eloquently about what she saw as the biggest risks to international peace and security, pointing out that an increased use of AI in wars, law enforcement, border control, and terrorism, by both state and non-state actors, has put the world at great peril. Unless a binding and coherent set of norms are established at the global level, we face an existential threat, she implored. GenAI is still not at the point of reaching sentience and genuinely caring. We are sentient beings who can care, and we must—not only in the name of academic integrity, but also for the fate of the world.

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