

ASCILITE 2024

Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

Exploring the integration of Generative AI in assessment in a tertiary context: A case study

Eleni Petraki

Faculty of Education, University of Canberra

The unprecedented advancements of Generative Artificial Intelligence (GenAI) tools have generated controversies surrounding their potential for transforming educational practices, and democratising knowledge sharing, while acknowledging risks to current educational practices. In order to understand the potential and risks of GenAI tools on educational practices, recent research points to the need to develop student and teacher AI literacy skills and to investigate the impact of GenAI integration in learning and assessment practices. In addressing the call for more research in the field, this study reports on the integration of GenAI tools in an academic assessment in a postgraduate course for pre-service language teachers at an Australian university. Data were collected from students' reflections of their adoption of GenAI tools for planning their assessment and from qualitative surveys. Thematic analysis was employed to identify students' perceived challenges and benefits in adopting GenAI for essay writing. Pre-service teachers recognised benefits in adopting GenAI for planning and generating ideas for academic writing but recognised the importance of mitigating risks created by inaccuracies or biases in content. The findings confirm the importance of transparency in the integration of GenAI and developing student awareness of and training in ethical use of GenAI for higher education.

Keywords: Generative Artificial Intelligence, higher education, Artificial Intelligence, AI, assessment, student perceptions

Introduction

The release of GenAI (Generative Artificial Intelligence) technologies has disrupted educational practices and created a general divide amongst educators. While AI technologies have been integrated at different levels in many educational practices, scholars have expressed concerns about its impact on maintaining student academic integrity, trustworthiness in assessment submissions and increase in academic and unethical conduct (Cooper, 2023; Peres et al. 2023). GenAI has faced criticism for its potential to perpetuate biases, stereotypes and inaccuracies. Several concerns were raised about its impact on increasing teacher workloads. (Chan & Hu, 2023; Lee H. et al., 2024). Equally, GenAI use has been associated with several benefits, especially its potential for transforming pedagogies and education (Lodge et al., 2023) by facilitating individualised learning and offering immediate feedback and support on students' writing (Ipek et al., 2023).

There is growing empirical research on the adoption, use and perceptions on GenAI integration, albeit this research is limited. The past year has seen a proliferation of research from scholars on the risks of GenAI adoption and the development of GenAI policies in tertiary settings. Most recent research points to the need for developing teachers' and students' GenAI skills to prepare them for a technology dominated workforce. Some scholars go as far as to argue that responsible and ethical integration of GenAI is an important step towards reducing some of its limitations and educational inequities (Yusuf et al., 2024).

To address this gap and add to the ongoing research on AI implementation, the present research integrated a GenAI assisted assessment in a postgraduate course for preservice language teachers, encouraging student adoption, and investigated students' perceptions about the benefits and challenges with its use.

ASCILITE 2024

Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

Background

This section will provide a definition of GenAI technologies, followed by an academic discussion about its potential in education. It will then review research on GenAI implementation in tertiary context and student perceptions, as a way of contextualising the present study.

GenAI technologies refer to a list of technologies such as Bing AI, ChatGPT, DALL-E, Claude, Gemini, and many new and growing technologies that have the capacity to create content resembling human generated output (Lodge et al., 2023; McKnight & Hicks, 2023). Trained on extensive sets of unlabelled data and relying on machine learning algorithms and deep learning neural networks, they use patterns and numbers to generate new content using a variety of forms-such as text, image, video, audio, and computer code.

Recent discussions have focused on the potential of GenAI for transforming educational practices and revolutionising assessment. Kasneci et al. (2023) highlighted how ChatGPT might support teachers in classroom facilitation and furnish students with simplified answers to a range of student questions at an incredible speed. GenAI tools have been considered valuable for conducting research, assisting in tasks such as generating ideas, synthesizing information, and summarising a vast amount of text data to help researchers analyse data and compose their writing (Chan & Hu 2023; Peres et al., 2023). They have also been associated with maximising teaching efficiencies by assisting teachers with marking, creating marking rubrics, differentiated learning tasks and grading if trained effectively (Lodge et al., 2023).

One of the most significant limitations in using GenAI in education includes its ability to create false, inaccurate and inauthentic content, due to its hallucinations (Kim, 2023). GenAI has been accused of creating inauthentic references and bibliography which may hinder learners from using it appropriately and reliably. GenAI use has been linked with perpetuating biases, stereotypes and inequalities due to inaccuracies and training on limited and not diverse content (Abbas et al., 2024). There are concerns that students might become increasingly dependent on its use, thus limiting their development of problem solving and critical thinking skills.

Recent empirical research has explored the use and adoption of GenAI in different academic settings, which provides an important context to this study. Yusuf et al.'s (2023) global study investigated the level of participant awareness of GenAI tools in higher education and their concerns about ethical integrity across different cultures. Using an online survey of 1217 participants across 76 countries the study offered significant insights into similarities and differences in use and perceptions of AI around the world, using a multicultural lens. A significant majority acknowledged familiarity with these tools while 15% were unfamiliar and 3.29% expressed uncertainty. 35.7% expressed an inclination to employ the tools while 27.9% indicating that they were likely to do that. Participants were divided as to whether use of GenAI in academic assessment was cheating or not. A large proportion of participants (42.7%) supported the need for the implementation of regulatory policies for GenAI in higher education. Participants from countries characterised to be dominated by low power distance and collectiveness advocated for policy regulation on GenAI use as opposed to participants from high power distance, and individualism. The study recommended continuous research on student perceptions and tailoring AI policies and adoption to culturally specific practices and needs.

Abbas et al. (2024) explored the benefits and limitations of ChatGPT usage among university students in Pakistan, using a quantitative survey. One of the key findings was that excessive use of ChatGPT can have deleterious effects on students learning outcomes, leading to procrastination, memory loss and academic performance of the students. The findings indicated that students who experienced high academic workload and time pressure in their studies were more likely to use ChatGPT, while students concerned about the quality of their writing were less likely to use ChatGPT. The authors argued for maintaining a balance between technological assistance and personal effort in the learning process.

Chan and Hu (2023) investigated perceptions of 399 university students from Hong Kong on their familiarity with these tools, willingness to use them and suggestions about effective integration in education. The survey-based study revealed that students held positive attitudes towards GenAI and willingness to adopt it and develop AI competencies. Students' positive attitudes were justified based on perceived GenAI benefits: use of GenAI for conducting research, provision of brainstorming assistance and personalised feedback; assistance

ASCILITE 2024

Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

with completing administrative tasks and co-creating artefacts. Students expressed some concerns about its use such as the risks of inaccuracies and lack of transparency, security and privacy risks and finally uncertainty due to lack of AI policies. They argued that understanding students' perceptions about AI technologies will assist educators and policy makers in effective integration in their current teaching practices and they call for more research to take place.

Integration of AI-assisted learning has been the focus of several studies in the tertiary context (Lee D. et al., 2024; Li, 2023; Pham et al., 2023). Lee D. et al. (2024) experimented with a novel approach integrating ChatGPT with self-reflection in a higher education program in Hong Kong. The approach incorporated the integration of a guidance-based ChatGPT-assisted learning aid (GCLA) during tutorial group participation. The authors concluded that this integration can not only supplement blended learning, but can provide timely and personalised guidance to students, enhance their engagement and self-efficacy, and improve their learning outcomes, compared to the traditional use of ChatGPT in the learning classroom.

Pham et al. (2023) investigated the effectiveness of an AI-assisted workflow in an undergraduate engineering course in a southeast Asian university context. The workflow included design of prompts, evaluation of prompts and test of student satisfaction. The findings highlighted the potential of AI assisted learning in that context for offering valuable insights and personalised assistance that could enhance the student learning experience. Li (2023) employed a combination of ChatGPT and a flipped classroom (FC) pedagogy which they investigated using an experimental design. The study revealed that students learning with the ChatGPT-FC model achieved better performance and had positive attitude to integrating GenAI. The adoption of this model had positive outcomes in enhancing students' motivation, increasing positive learning attitudes, self-efficacy and their critical thinking. They recommended use of scaffolding in any GenAI intervention to facilitate development of critical thinking skills. Both studies emphasised the need for further exploration of GenAI in other disciplines and subjects.

Tertiary institutions in Australia are facing enormous challenges with regards to GenAI application and integration in different contexts. While some universities have developed policies on its use, others have delegated this decision to teaching staff, leading to uncertainty among students and educators alike. At the time when this research was designed and conducted (early 2024), most Universities were still grappling with the impact of GenAI on student assessment, academic integrity maintenance and the need to redesign assessment (Lodge et al., 2023).

Alongside these challenges, there is a consensus that educators must understand the evolving nature of GenAI and the opportunities it creates for student learning. Failing to equip students with the skills to adapt to a world increasingly influenced by GenAI and its future equivalents would disadvantage them (Celik, 2023; McKnight & Hicks, 2023). Lodge et al. (2023) suggest that a future direction for research should be to develop an understanding of how LLMs can assist current education practices, transform and innovate current pedagogies, and promote their ethical use by students.

This study addresses the gaps identified in the preceding literature, which calls for research into novel approaches and pedagogies utilising GenAI, and assessment of the benefits and challenges GenAI holds for student learning (Lodge et al., 2023, Pham et al., 2023; Li, 2023). The research is distinctive in several aspects. First, it incorporated the design of a novel AI-assisted assessment in a postgraduate course for preservice teachers with a non-English background, which is a context that has not been addressed in the aforementioned literature. This investigation is also among the few conducted in the Australian tertiary context that examined students' perceptions towards GenAI assisted assessment, using a qualitative approach, thus addressing the literature gap.

Research design

GenAI integration and assessment design

Many GenAI scholars advocate the adoption of GenAI in assessment practices. Wysel (2023) and Furze (2024) introduce the concept of levels of AI integration in assessment. Wysel identifies 5 scales in the AI integration process. The first two levels include promotion of GenAI with critical analysis while Levels 3, 4, 5 encourage use

ASCILITE 2024

Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

of AI throughout the whole assessment process, including co-writing and personalised feedback. Furze (2024) identifies 5 levels of AI integration starting from level 1 which involves no AI, 2. AI-assisted ideas generation and structuring, 3. AI assisted editing, 4. AI task completion, human evaluation and, 5. Full AI involving creation and collaboration between human-AI.

Given the current divide in AI adoptions, the present study adopted a low-risk approach to integrating GenAI in the development of an assessment task, following the preliminary levels in both scales. It followed Wysel's step 1 (raise the tide) which recommends promoting adoption and identifying the context of GenAI use and, step 2 expecting AI-human collaboration with critical analysis. It also aligned with Furze's steps 2 and 3, by encouraging transparency in GenAI use and promoting student's development of critical thinking skills.

During the first semester of 2024, most Australian universities were grappling with the implications of the rapid growth and capabilities of GenAI (Lodge et al., 2023). The university where the study was conducted had not developed a specific policy for employing AI in teaching. The convenor designed an assignment expecting students to employ GenAI for planning and generating input for writing an argumentative essay in a postgraduate teacher education course. The assessment was moderated by other academics as per the moderation policy to ensure the learning outcomes were maintained.

Students were required to write an essay arguing about the pros and cons of a particular theory and its application to teaching. Students were expected to use the essay prompt on ChatGPT or any other GenAI of their choice to learn about the topic, generate ideas and structure arguments. They would then reflect on and use the output to do research and write their essay using additional sources. Their submission would include the AI-generated text as an appendix, the AI prompts they used, their final essay and a reflection on their experience in using GenAI for assessment preparation. The 300-word reflection expected students to reflect on the benefits of integrating GenAI in writing or planning the essay, limitations of its use and any possible changes they would make to the assessment. Participants were invited to participate either by filling in a short survey or agree for their reflection to be used in this project. The reflection had a 10% weighted allocation and students were informed that their participation would not have an impact on their mark on either the reflection or the assignment mark. Students received an online presentation on using ChatGPT and writing appropriate prompts for their essay and had the opportunity to ask questions about their GenAI use.

Data collection

The project received ethics approval by an Australian university, and this facilitated the voluntary nature of student participation. The course was offered fully online by an Australian university and students were preservice language teachers who were located in a Southeast Asian country. The convenor only had online asynchronous interactions with the students. Students had met the IELTS requirements to be enrolled in an Australian course.

Students were invited to participate in the data collection process through an LMS announcement containing the information participant form and invitation to send their consent to the unit convenor. They could indicate their consent for their assignments to be employed in this project or/and to fill in the qualitative survey. There were two teaching staff in the unit but only the researcher had access to the survey data and responses and the student names who agreed to participate. Twenty participants filled in the survey and only 3 expressed their willingness to contribute their reflections to the project. The low response rate might be due to students' lack of familiarity with new cultural processes and their work and limited time commitments.

The survey was written in English, was designed in Qualtrics, consisted of 10 questions, 3 Likert scale and the remaining questions were qualitative open-ended enquiring about students' perceptions on their experience of using GenAI in working on this assessment, benefits and challenges encountered and recommendations about their potential use of GenAI for academic writing in the tertiary context. Given that previous research on students' perceptions towards AI relied heavily on quantitative surveys (Chan & Zhou, 2023), open ended questions and reflections aimed to provide comprehensive insights into the applications of GenAI in that context.

ASCILITE 2024

Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

Measurement of frequencies were calculated from rating and ranking questions and graphs were generated using Microsoft Excel. The qualitative data were analysed using thematic analysis, a qualitative data analytic approach that was employed for creating codes and themes by examining and analysing the qualitative responses. These were created by merging the answers from the student reflections and their survey responses. They were inserted in Excel and codes were created using the step-by-step process identified in Braun and Clarke (2021). As not all students provided responses in all questions, the focus was on rich analysis and not on quantifying the themes. Specifically reflexive thematic analysis was employed, a method which relies on researchers' interpretation of the domains of meaning in the participants responses.

Findings

All students submitted their assignments, consisting of their essays, their reflections on the assistance they received from GenAI, and the GenAI output following the assessment instructions. The assignments did undergo a Turnitin check which did not indicate or identify matches with the GenAI output consistently. During the workshop students were able to address a variety of questions as to the extent of using GenAI.

With respect to the quantitative survey data, participants were asked about their level of agreement with a range of statements. Table 1 provides a summary of the participants' agreement with several statements. In item 1, 'The use of GenAI is beneficial for writing assignments', 44% of participants indicated their agreement with this statement, 27.78 expressed strong agreement and only 11% selected the option of neither agree/disagree. This suggests students favoured the use of GenAI for assessment writing in this context.

Table 1.

Student perceptions about the use of GenAI for academic assignments

1: The use of GenAI is useful for writing assignments	
Strongly Agree	27.78
Somewhat agree	44.44
Neither agree or disagree	11.11
Somewhat disagree	0
Strongly disagree	0
2: Generative AI should be allowed for assessment writing in tertiary setting	
Strongly agree	15.38
Somewhat agree	38.46
Neither agree nor disagree	38.46
Somewhat disagree	7.69
Strongly disagree	0.00
3: Generative AI should be integrated in tutorial tasks in tertiary setting.	
Strongly agree	28.57
Somewhat agree	42.86
Neither agree nor disagree	21.43
Somewhat disagree	7.14
Strongly disagree	0

ASCILITE 2024

Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

Similar results were reported in Item 3 in which participants were asked to indicate their agreement with two statements. For the first statement (Table 1) 70% of participants showed their agreement with allowing GenAI to be used for assessment writing while only 21.34 had no opinion and 7.14 disagreed. Interestingly, with regard to the statement 'GenAI should be integrated in tutorial tasks in tertiary setting', students were split between the somewhat agree option and neither agree or disagree (Figure 3). This result could be attributed to students lacking the experience with GenAI use in a classroom or online experience setting.

After thematic analysis, the qualitative findings resulted in the development of three themes: students' perceptions about use of GenAI for assessment writing, perceived challenges and, recommendations about its adoption for assessment writing in a tertiary context.

Benefits of using AI for academic assessment

Most students found the process beneficial because it assisted them in trialling and experimenting with Generative AI. A student noted: 'Very useful. I missed nearly all of the lectures due to my family circumstance, so having GenAI to help explaining all the important concepts is really helpful to me'. There was a small number of students (2) who found the process 'redundant or unhelpful because it was only able to provide very general ideas, without providing detail or complexity in the matter'. The dichotomy of views reflected the students' opinions about the range of benefits and challenges with its use.

Amongst the common benefits and due to the nature of the assessment, most students attributed the benefits of GenAI to generating a variety of ideas for writing, providing a good structure and an outline for their essay proposal. These can be seen in the following responses: 'It is useful for planning and designing assignments' and 'It gives me more ideas about the structure when I write an essay'.

A good number of students found GenAI as a good starting point for generating ideas which they could expand upon, brainstorming ideas for an essay, and summarising concepts and definitions that assisted them with writing. This is exemplified in the following comment: 'it helps me structure my essay with a concrete plan and multiple ideas to expand from' and 'it is a good place to start if a person is trying to get a grasp of what they are going to write about'.

Once students could generate ideas, they could equally get assistance with explaining and elaborating key terminology and concepts, which they may have missed in the lecture or the assignment description. 'It helped me summarize and understand the key concepts in the subject' and as seen earlier it helped a student go through the lecture notes via summarising these and providing clear summaries.

The role of GenAI in summarising and generating key concepts within a short time created time efficiencies for students and this was also notable in the survey responses: 'GenAI was beneficial for brainstorming ideas and it saved time'. Students considered that it would equally create time efficiencies for professors who would be less burdened to answer student queries 'Moreover, communicating with an AI is not as anxiety-provoking as talking to a professor, it could also save the professors a lot of time'.

Some students admitted to finding this experience of using AI for ideas and planning insightful because they learnt to develop prompts and experiment with the tools and prompting. As such they saw multiple benefits both in developing GenAI readiness and working on strategies for writing assignments:

'I learned to write the prompt in detail and broken down to multiple steps (brainstorming, structuring, clarification, etc.) to produce the effective results that is appropriate for my assignment instead of using the given task itself'.

A significant number of students acknowledged the advantages of using GenAI for editing, proofreading, and enhancing essay writing. This was particularly beneficial for students with limited time and those for whom English is a second language. GenAI helped these students organise their ideas logically and write effective paragraphs in an appropriate academic style. The following quotes illustrate this point:

'The organization of ideas is logical, and the language is academic'.

ASCILITE 2024

Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

'Moreover, the AI's ability to generate structured outlines and coherent suggested text allowed a more efficient organization of thoughts and arguments. This was particularly useful in maintaining cohesion and coherence across different sections of the assignment'.

Limitations of GenAI for assessment in a tertiary setting

GenAI's most frequently cited benefits, its ability to provide general ideas and summaries, was equally considered one of its most pronounced limitations: 'the organization of ideas is logical, and the language is academic'. Students were aware that 'the content is too general and one student noted 'Normally, it is quite easy to use GenAI when it comes to general questions. However, it takes time and effort to deal with more complex and detailed questions. When there are many requirements at one time, GenAI can miss some of them and come with off-topic answers.'

Additionally, students noted that some responses and references were inaccurate or false. 'The information from ChatGPT can be right or wrong so I need to be careful when choosing the information'. Students were able to apply their critical lens in responding to this question. It is possible that given the assignment requirements, which prompted students to check their answers, and do their own research, they had the opportunity to apply reflective and critical skills.

Another noteworthy limitation is students' awareness of bias in the answers and the style GenAI used that did not represent the students' voices: 'GenAI cannot provide an in-depth analysis, and it uses some common verbs repeatedly'. Even though the AI generated language was 'nice sounding', I actively avoiding using them in my assessment because it might cause misunderstanding that an AI wrote it and not me' and 'I faced difficulties ensuring the AI-generated content was entirely relevant and free from misinterpretations.'

Students' time and effort in interpreting, editing, validating and integrating GenAI in their work were considered important obstacles in expecting students to employ AI in their assessments. Many students acknowledged that without meticulous checking of the work, consistent rewriting and refinements of the writing to improve coherence, it would lead to a poor-quality assignment. 'Sometimes, the content needed refinement for accuracy and appropriateness, requiring additional time for review and editing. Another challenge is maintaining an academic tone consistently was challenging, as the AI-generated text sometimes needed stylistic adjustments. Additionally, integrating AI content with my original insights required careful merging to create a cohesive paper.'

Last, the risks of breaching academic integrity and plagiarism were also reported by few students who considered GenAI may be a sweet temptation for some students to produce work quickly and effectively. Students also expressed concern about the long-term implications of continuous use or overdependence on GenAI. They expressed concerns about decreasing students' skills and competencies in writing: 'students may forget how to write essays' and their critical abilities may be negatively impacted through excessive use.

Recommendations for using GenAI in a tertiary setting

Two questions asked students about their perceptions for enabling policies that allow GenAI integration for assessment or for problem solving during tutorial tasks. Students expressed general reflections and recommendations for GenAI use in pedagogy and assessment.

The majority of students supported the idea of GenAI integration in a tertiary context, which they attributed to the aforementioned advantages in its use, time efficiency, prompt personalised feedback, idea generation and improving academic writing. However, many cautioned against the possibilities of inappropriate and unethical use of GenAI, especially in the absence of a policy. They suggested it should be adopted as a supplementary tool to assist with collating important ideas or providing explanations to key concepts. They argued that while GenAI may take the form of an online assistant, students must be 'committed to improving their critical thinking'. Another student noted:

'While GenAI offers significant benefits for academic writing in terms of efficiency and support, it should be used as a supplementary tool rather than a primary one. Ethical considerations, such as maintaining academic integrity and fostering critical thinking, are crucial. Students must actively engage with the material and use GenAI to enhance their learning, not replace it.'

ASCILITE 2024

Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

A few students opposed the idea that GenAI is a useful long-term strategy for academic writing. They expressed concerns about the risks it posed to students' development of critical thinking, creativity and innovation. A student noted 'If students just rely on GenAI alone for their assignments, given my uncertainty about GenAI's data set, it's hard to say whether they will really gain anything useful info/ viewpoints for themselves..., relying on GPT to bridge all of the understanding gap is only going to hurt their ability to thinking critically in the long run. Our brain is just like a muscle, and if students stop using it to think and solve problems, then it will only get weaker.'

To address some of these concerns, some students suggested that student self-directed learning should always be the focus of any course alongside any GenAI adoption. They advocated developing student awareness of the importance of adding students' own voices and developing students' analytical thinking when recommending AI adoption. Training students in using it effectively and ethically featured prominently in their responses: 'the writer's analytical skills and personal insights remain crucial for producing multi-dimensional and original work'.

Discussion

The current project advanced the current research on AI integration in tertiary education by adopting an AI-assisted assessment in a preservice language teacher education course and investigated students' experience and perceptions about the benefits and challenges in using AI in assessment. It responded to the necessity for developing student and teacher readiness in GenAI skills in a university setting.

The findings highlighted students' positive attitudes in using AI for assessment planning, structuring and generating ideas. As one of the key stakeholders in education outcomes, students showed awareness of the benefits of using GenAI for tertiary associated tasks. They acknowledged the potential of GenAI for adding quality to their writing, but also its capacity to generate ideas and outlines to assist them with their assessment planning and structure. One of the most significant advantages was the time efficiency GenAI created enabling them to focus on synthesising ideas from reliable sources, organising paragraphs and building coherence. Additionally, students recognized that the benefits of AI could extend to building confidence in writing and providing opportunities for reluctant or hesitant students to use AI as a friendly assistant. These results confirm other studies in international contexts, such as Hong Kong, Pakistan and China (Abbas et al., 2023; Cha, 2023; Chan & Hu, 2023). It should be noted that the benefits of creating time efficiency, lowering student anxiety and improving students' confidence were not previously reported and were specific to the cohort of postgraduate students who were second language learners.

The positive attitudes might be linked to students increased motivation. Li (2023) highlighted that frequent use of GenAI in her study was associated with higher intrinsic motivation in learning with GenAI. Abbas et al. (2023) found a link between students' frequent use and positive attitudes to GenAI. Equally, these students may have improved their learning experience in this course and appreciated the immediate feedback they received with GenAI tools. It should be added that students were forbidden from using GenAI in all other units associated with their postgraduate degree at the time of this research.

Students reported developing critical thinking skills as they were using GenAI to reflect on the output of their human-AI interactions and compare it with their research from their own assignment. It is possible that with transparent use of GenAI, and the critical analysis facilitated by the innovative assessment design, students could refine their prompts, identify appropriate references and compare the content with references they sourced from the library databases. Positive increase in students' creative thinking was reported in the experimental group that used GPT-FL classroom conditions in Li's study (2023) and in Hung and Yeh (2023). One of the explanations offered for this trend is the GenAI ability to provide scaffolding on their thinking and personalised feedback that could assist with the essay development. This finding also validates scholarly suggestions that student engagement in critiquing and engaging with GenAI output can have a positive impact on students' development of critical thinking skills.

Despite the favourable attitudes and their willingness to use GenAI, students acknowledged several limitations in its use, which aligns with previous research (Abbas et al., 2024; Atlas, 2023; Chan & Hu, 2023). These were clearly elaborated in their reflections and the survey results. They included the inability of GenAI to provide detailed and tailored responses that align with the assignment description. This finding could be a result of

ASCILITE 2024

Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

their lack of experience or exposure to GenAI and/or a reflection of AI's capabilities on this topic. GenAI hallucinations, inaccuracies in referencing and content, the possibility for bias, have been reported in previous studies on student perceptions (Abbas et al., 2024).

The survey results highlighted student awareness of the specific language patterns associated with GenAI tools. The assignment expected students to use GenAI output, compare with reliable academic sources and write their assignment using authentic sources. This finding could be attributed to students' engagement in critical thinking and reflection that they developed during this process. They were efficient in detecting GenAI's own idiosyncratic style and their need to synthesise GenAI output into their thinking to produce a coherent academic style. This finding may be a reflection of the maturity of this postgraduate student cohort, their motivation in improving their performance and could be related to their experience as language teachers. Additionally, future assessment and GenAI adoption could be used in other subjects and context to enhance students' critical and reflective skills.

Conclusion

This research reported the findings of a small-scale study that incorporated the novel design of an AI-assisted assessment encouraging students' reflective skills in a course for preservice language teachers. This study added to the diversity of voices necessary to progress the discussions and policies in Generative AI in the Australian context, focusing on postgraduate students' perceptions, and addressed the call for more intensive research on AI-assisted learning. Although this is a small-scale study, its findings contribute to understanding student perceptions on GenAI use and extend the limited body of research focused on developing an ethical framework for AI integration in education.

In sum, students held favourable attitudes to integrating GenAI in their assignment writing and favoured a policy that would promote open and transparent use of GenAI more than prevention. They embraced the AI-assisted assessment design and appreciated learning new skills, such as prompt engineering. At the same time, they also displayed their critical understanding of the limitations of GenAI in writing assessment and held balanced views about its capabilities. This study aligns with the proposal made in other studies which advocate developing students' awareness and skills in AI to prepare them for future AI prevalent job market.

Students' recommendations centred around developing tailored and appropriate AI training for students and teachers in prompt engineering and GenAI capabilities that can enhance their learning experience. These echoes recommendations made in Pham et al.'s (2023) and Xia et al.'s studies (2024). The surveyed students highlighted that GenAI be used as a supplementary tool that facilitates self-directed learning, informed decision making, a recommendation made by (Zhu et al. 2023). Leveraging GenAI capabilities, such as personalised feedback and individualised learning, can assist students with monitoring their learning goals more effectively and build writing confidence. In echoing Xia et al. (2023), this study advocates the redesign of AI-enhanced curricula and assessment that foster the development of students' self-regulated learning skills, critical thinking and creativity alongside ethical and transparent use of GenAI. The development of critical and reflective skills was one of the main recommendations of this cohort and could be leveraged in any future integration of AI in tertiary context.

To better understand the limitations and impact of the increasing capabilities of GenAI, it is important that additional research in different contexts, countries, disciplines and with larger student and teacher samples is undertaken. Larger scale studies with more students and teacher involvement would provide additional complementary insights on the appropriate use in this context and can contribute to developing transparent higher education AI policies. Additional research should investigate GenAI integrations and interventions at different levels in assessment and student learning tasks to obtain insights into the educational potential of Generative AI capabilities and enhance student and teacher development of AI literacies.

References

Abbas, M., Jam, F. A., & Khan, T. I. (2024). Is it harmful or helpful? Examining the causes and consequences of generative AI usage among university students. *International Journal of Educational Technology in Higher Education*, 21(1), 10. <https://doi.org/10.1186/s41239-024-00444-7>

ASCILITE 2024

Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

- Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*, 18(3), 328–352. <https://doi.org/10.1080/14780887.2020.1769238>
- Celik, I. (2023). Towards Intelligent-TPACK. *Computers in Human Behaviour*, 138(107468), 1-12. <https://doi.org/10.1016/j.chb.2022.107468>
- Chan, C. K. Y., & Hu, W. (2023). Students' voices on generative AI: perceptions, benefits, and challenges in higher education: Revista de Universidad y Sociedad del Conocimiento. *International Journal of Educational Technology in Higher Education*, 20(1), 43. <https://doi.org/https://doi.org/10.1186/s41239-023-00411-8>
- Chan, C. K. Y., & Zhou, W. (2023). Deconstructing Student Perceptions of Generative AI (GenAI) through an Expectancy Value Theory (EVT)-based Instrument [Preprint]. arXiv. <https://arxiv.org/abs/2305.01186>
- Cooper, G. (2023). Examining science education in ChatGPT: An exploratory study of Generative Artificial Intelligence. *Journal of Science Education and Technology*, 32, 444–452. <https://doi.org/10.1007/s10956-023-10039-y>
- Dai, W., Lin, J., Jin, F., Li, T., Tsai, Y.-S., Gasevic, D., & Chen, G. (2023). Can Large Language Models Provide Feedback to Students? A Case Study on ChatGPT. *2023 IEEE International Conference on Advanced Learning Technologies (ICALT)*, Orem, UT, USA, 2023, pp. 323-325. <https://doi.org/10.35542/osf.io/hcgzj>
- Ipek, Z. H. et al. (2023). Educational Applications of the ChatGPT AI System: A Systematic Review Research. *Educational Process International Journal* 12(3):26-55, DOI:10.22521/edupij.2023.123.2
- Kim, S. G. Using ChatGPT for language editing in scientific articles. *Maxillofac. Plast. Reconstr. Surg.* 45(13), 1-2. <https://doi.org/10.1186/s40902-023-00381-x> (2023)
- Lee, D., Arnold, M., Srivastava, A., Plastow, K., Strelan, P., Ploeckl, F., Lekkas, D., & Palmer, E. (2024). The impact of generative AI on higher education learning and teaching: A study of educators' perspectives. *Computers and Education: Artificial Intelligence*, 6(100221), 1-10. <https://doi.org/https://doi.org/10.1016/j.caeai.2024.100221>
- Lee, H.-Y., Chen, P.-H., Wang, W.-S., Huang, Y.-M., & Wu, T.-T. (2024). Empowering ChatGPT with guidance mechanism in blended learning: effect of self-regulated learning, higher-order thinking skills, and knowledge construction. *International Journal of Educational Technology in Higher Education*, 21(16), 1-28. <https://doi.org/10.1186/s41239-024-00447-4>
- Li, H. (2023). Effects of a ChatGPT-based flipped learning guiding approach on learners' courseware project performances and perceptions. *Australasian Journal of Educational Technology*, 39(5), 40-58. <https://doi.org/10.14742/ajet.8923>
- Lodge, J., Thompson, K., & Corrin, L. (2023). Mapping out a research agenda for generative artificial intelligence in tertiary education. *Australasian Journal of Educational Technology*, 39(1), 1-8. <https://doi.org/https://doi.org/10.14742/ajet.8695>
- McKnight, L., & Hicks, T. (2023). Generative AI writing tools: How they work, what they do, and why they matter. In R. E. Ferdig et al. (Eds.), *What PreK-12 teachers should know about educational technology in 2023: A research-to-practice anthology* (pp. 117-122): Association for the Advancement of Computing in Education. <https://www.learntechlib.org/p/222690>
- Peres, R., Shreier, M., Schweidel, D., & Sorescu, A. (2023). On ChatGPT and beyond: How generative artificial intelligence may affect research, teaching, and practice. *International Journal of Research in Marketing*, 40(2), 269-275. <https://doi.org/10.1016/j.ijresmar.2023.03.001>
- Pham, T., Nguyen, T. B., Ha, S., & Nguyen Ngoc, N. T. (2023). Digital transformation in engineering education: Exploring the potential of AI-assisted learning. *Australasian Journal of Educational Technology*, 39(5), 1-19. <https://doi.org/10.14742/ajet.8825>
- Wysel, M. (2023). Frenemies: ChatGPT within Assessments. Ascilite Transforming Assessment webinar. 10th April 2024. Accessed at https://transformingassessment.com/events_10_april_2024.php
- Xia, Q., Weng, X., Ouyang, F., Lin, T. J., & Chiu, T. K. F. (2024/12//). A scoping review on how generative artificial intelligence transforms assessment in higher education: Revista de universidad y sociedad del conocimiento. *International Journal of Educational Technology in Higher Education*, 21(40), 1-28. <https://doi.org/10.1186/s41239-024-00468-z>
- Yusuf, A., Pervin, N., & Román-González, M. (2024). Generative AI and the future of higher education: a threat to academic integrity or reformation? Evidence from multicultural perspectives. *International Journal of Educational Technology in Higher Education*, 21(21), 1-29. <https://doi.org/10.1186/s41239-024-00453-6>

ASCILITE 2024

Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

Petraki, E. (2024). Exploring the integration of Generative AI in assessment in a tertiary context: A case study. In Cochrane, T., Narayan, V., Bone, E., Deneen, C., Saligari, M., Tregloan, K., and Vanderburg, R. (Eds.), *Navigating the Terrain: Emerging frontiers in learning spaces, pedagogies, and technologies*. Proceedings ASCILITE 2024. Melbourne (pp. 308-318). <https://doi.org/10.14742/apubs.2024.1537>

Note: All published papers are refereed, having undergone a double-blind peer-review process. The author(s) assign a Creative Commons by attribution license enabling others to distribute, remix, tweak, and build upon their work, even commercially, as long as credit is given to the author(s) for the original creation.

© Petraki, E. 2024