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## Integrating Generative AI into University Coursework Assessments – A Student Perspective

Angela Tam, Ph.D., David Abraham, Ph.D. Andrew Williams, Ph.D.

### Author Note

Angela Tam, <https://orcid.org/0000-0001-8322-180X>  
David Abraham, <https://orcid.org/0000-0001-8952-6057>  
Andrew Williams, <https://orcid.org/0000-0002-0908-0364>  
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*Early View*

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**Abstract:** Generative AI is reshaping higher education and prompting a re-evaluation of traditional assessment practices. This study examines undergraduate university students' experiences and perceptions of undertaking an AI-integrated coursework assessment, whereby students were tasked with critically evaluating ChatGPT generated scientific output. An AI-integrated assessment case study is presented, followed by a mixed-methods analysis of questionnaire data, open-ended responses, and focus group discussions. Students reported that generative AI supports university assessments through idea generation, summarization, and clarification of complex concepts, but expressed concerns about academic integrity, and the reliability and scientific accuracy of AI generated outputs. AI-enabled assessments were viewed positively as they encouraged critical evaluation of AI-generated content, supported independent research and promoted understanding of the limitations of AI. However, students also identified potential long-term risks to critical thinking associated with AI use and emphasized the importance of clearer institutional guidance and further support for digital literacy development. Although the study was limited to a single student cohort, the findings suggest that thoughtfully integrating AI into the assessment structure can preserve critical thinking, promote AI literacy competencies and maintain assessment authenticity.

**Keywords:** *generative artificial intelligence, ChatGPT, assessment, coursework, higher education, student perceptions*

## Literature Review

Large language models (LLMs) are a type of artificial intelligence (AI) model designed to understand and generate human-like text. These models are trained on vast amounts of data from the corpus of information on the internet. For example, it has been estimated that ChatGPT was trained on hundreds of terabytes of data. LLMs use machine learning algorithms that predict and produce coherent and contextually appropriate text, based on the prompt they receive. The application of AI has now expanded across myriad spheres of society, including business, technology, science and education (Borger et al., 2023; Haque & Li, 2024). Therefore, many consider generative AI to have the potential to transform higher education practice, with educators encouraged to embrace its capabilities (Cooper, 2023).

The emergence of ChatGPT, and the wider public awareness of its abilities, has led educators and higher education institutions (HEIs) to raise concerns about its impact on academic integrity and the current usefulness of traditional academic assessments. The user-friendly interface and ease of access for most students raises concerns that students will use LLMs to generate substantive text for their assessments. This presents major concerns about plagiarism and academic integrity, whereby students could easily leverage generative AI to generate text, images and diagrams and submit these as their own work (Farrelly & Baker, 2023; Matheis & John, 2024; Yusuf et al., 2024). This raises several challenges for HEIs, for example how to recognize plagiarized AI-generated text, whether existing assessment strategies maintain high standards of academic rigor, and how to evaluate the impact of AI on student learning (Jones, 2023; Onesi-Ozigagun et al., 2024; Vieriu & Petrea, 2025).

To counter AI-generated plagiarism, some HEIs have adopted applications that support AI detection algorithms (McDonald et al., 2024), such as Turnitin that is embedded in virtual learning environments. However, others have refrained from using AI detection software due to accuracy and reliability concerns, particularly regarding the possibility of detecting false positives (Dalalah & Dalalah, 2023; Saqib & Zia, 2024; Weber-Wulff et al., 2023). Therefore, existing AI text detection tools are limited in their capacity to accurately detect AI generated text, while current AI detection tools may unfairly discriminate against students whose first language is not English, by mistaking text written by the student with AI generated text (Fröhling, 2021; Tsigaris & da Silva, 2026). This is an important consideration when applying detection tools fairly across diverse student cohorts. The rapid development of generative AI technologies, and the release of new versions with improved capabilities, may outpace existing detection software and therefore entering a digital arms race may prove futile (Elkhatat et al., 2023; Kar et al., 2025).

A more pragmatic approach is for universities to employ alternative strategies to assess their students (Perkins et al., 2024; Williams, 2025). A return to in-person examinations, especially post COVID-19, and a reduction in the reliance on online assessments might mitigate some of the issues concerning plagiarism. However, assessment strategies that integrate AI may provide a more progressive and contemporary approach to assessment design. Integrating AI into assessments may provide opportunities to improve student learning, promote personalized feedback and enhance AI literacy (Gamage et al., 2023; JISC, 2024; Moorhouse et al., 2023; Owan et al., 2023). Although teachers and HEIs face considerable challenges in adapting to new AI technologies, universities have a responsibility to train their students in the ethical and proper use of AI, and to provide students with skills for a career within an AI-driven society (Aoun, 2024). Integrating AI into the structure of coursework assessments may therefore promote AI literacy and provide an authentic assessment modality (Salinas-Navarro et al., 2024a, 2024b). Furthermore, the challenges associated with generative AI in higher education extend beyond plagiarism and academic integrity. Important questions are being asked about authorship, independence and the purpose of assessment. If coursework assessments can be completed without demonstrating the intended knowledge, judgement or disciplinary thinking, then the issue is one of assessment validity as well as academic misconduct (Kofinas et al., 2025). This reinforces the argument that assessments require a structural re-evaluation, rather than the mere implementation of mitigation strategies, for them to be sustainable in higher education settings (Curtis, 2025).

## Student Engagement with and Perception of Generative AI

Recent evidence shows a rapid normalization and acceptance of generative AI in student academic work (Williams, 2026). For example, a recent Higher Education Policy Institute (HELPI) report from the UK described near universal AI use, as 95% of students surveyed reported using AI in some capacity, and 94% reported using generative AI to help with assessed work (Freeman, 2025). Students use AI for a variety of tasks, including writing support, concept clarification, note-taking, revision, research assistance, immediate feedback, translation, and job preparation (Ravšelj et al., 2025; Strzelecki, 2024). However, students do not see all uses of AI as equivalent. Although students are generally enthusiastic about using generative AI to support learning, they worry about the unclear boundary between ethical use and cheating, especially in assessment (O’Dea et al., 2025; Shuhaiber et al., 2025). Student perceptions of AI may also be shaped by personal values and judgement, as well as confidence, discipline, linguistic demands, access to digital technology, and prior educational experience (Freeman, 2025; JISC, 2025).

Many universities are adopting a redesign of assessments in ways that preserve academic rigor while also developing students’ capacity to work critically and ethically with AI (Khlaif et al., 2025). Despite this, students and academics often have disparate views on the value of integrating AI into assessment. (Kizilcec et al., 2024; Smolansky et al., 2023). While academic staff tend to be more sympathetic to its adoption as an authentic tool that encourages critical thinking, students perceive this as a potential threat to their creativity. Conceptual research on evaluative judgement further suggests that students need to learn how to assess the quality of AI outputs and the appropriateness of using AI at different stages of disciplinary inquiry (Bearman et al., 2024). However, there is limited evidence on how students perceive coursework assessments that explicitly integrate generative AI into the task design or require students to critically evaluate its output. Therefore, there is value in examining discipline-specific cases in which generative AI is incorporated into an authentic coursework assessment, particularly where students are asked to critically evaluate AI generated output and then reflect on their experiences.

## Student AI Literacy

Historically, artificial intelligence has been defined as the science and engineering of creating intelligent computer programs (McCarthy, 2007). However, the lack of a universally accepted definition of AI complicates the establishment of a standardized framework for AI literacy in higher education. There is also a tendency to conflate general AI literacy with generative AI literacy, due to the immediate and transformative impact of LLMs (Holmes et al., 2022). Student AI literacy is often viewed as the specific ability to use generative tools to produce an output. However, AI literacy extends beyond basic technical operation to encompass the ability to critically evaluate technologies, make judgements on AI generated outputs and collaborate with AI tools effectively (Long & Magerko, 2020). For university assessments to remain robust, AI literacy must be framed as a competency that enables students to use AI as a scaffold for deeper inquiry rather than a shortcut to a final product or as a replacement for cognitive effort (Holmes, 2024).

Recent AI literacy frameworks emphasize a multidimensional approach to generative AI literacy (Annapureddy et al., 2025; Ng et al., 2021). This includes technical proficiency coupled with an

understanding of ethical implications, inherent biases, and systemic limitations. More specifically, integrating these competencies into coursework is essential for promoting critical thinking, as students should be taught to interrogate AI output critically (Gonsalves, 2026; Nguyen & Hayward, 2025). Integrating AI into coursework assessments therefore has the potential to fulfil two critical elements: by promoting student AI literacy skills and engaging students with critical thinking.

For AI-integrated assessments to be successful, foundational AI literacy proficiencies are required by both staff and students (Hackl et al., 2026). For example, educators require an appreciation of the capabilities and limitations of generative AI to adopt these technologies for disciplinary-specific assessment design. Concurrently, students require training and a working understanding of the responsible use of LLMs, including bias, hallucinations and the ethical limitations in academic work. AI literacy is contained within the broader pedagogical framework of digital literacy, which supports learning through the application of education technology (Gilster, 1997). AI literacy also falls within the paradigm of assessment for learning, which promotes evaluative judgement and feedback literacy (Boud, 2012; Winstone & Boud, 2022). In the context of AI-enabled assessments, critically engaging students with AI-generated output promotes critical thinking and judgement, and therefore reinforces AI literacy proficiencies (Holmes et al., 2019). The structural design of the AI-integrated assessment presented in this paper is therefore aligned with both digital (AI) literacy and assessment for learning pedagogies.

## Theoretical Framework

In higher education practice, assessments are often designed through constructive alignment, whereby the assessment aligns with intended learning outcomes, teaching and learning activities, and assessment criteria (Biggs, 1996). In parallel, authentic assessment emphasizes assignments and student outputs that are based on meaningful tasks that resemble real-world practice rather than proxy tests (Ashford-Rowe et al., 2014). More recently, the framework of authentic assessment has been extended to include AI-enabled or AI-integrated tasks that reflect modern workplace practices, which increasingly involve AI-augmented writing, analysis and design (Swiecki et al., 2022; Williams, 2025). Creating assessments that are both constructively aligned and authentic by design has become increasingly challenging in higher education settings due to the rapid proliferation of generative AI technologies. However, opportunities exist to embed AI into the structural design of assessments, particularly coursework assignments, while maintaining academic rigor and integrity (Corbin et al., 2025).

As generative AI operates via probabilistic patterns rather than critical evaluation, this poses a direct challenge to the authenticity and reliability of AI generated content (Hummel, 2025). Although AI can generate superficially convincing text, it lacks the capacity for deep disciplinary reasoning (Jose et al., 2025). The ease with which probabilistically generated text mimics authoritative discourse can tempt students to accept such output uncritically and outsource their reasoning (Misiejuk et al., 2026). This creates an opening for cognitive offloading, where the ease of AI generation replaces the intellectual aptitude necessary for student cognitive growth (Gerlich, 2025; Tang, 2025). To mitigate these risks and to avoid the homogenization of university submissions, and potentially biased academic output, it is no longer sufficient to simply police AI use. Instead, a fundamental redesign of coursework

assessments is required (Corbin et al., 2025), which ensures pedagogical accountability is maintained by creating assessments requiring human-centric critical thinking and independent verification.

When re-designing assessments to account for the challenges associated with generative AI, universities can bridge the gap between institutional expectations and the actual student experience by involving students in the co-design process (Deeley & Bovill, 2017). This partnership allows educators to maintain their role as arbiters of knowledge while drawing on student perspectives to create assessments that are authentic and more resistant to AI interference (Williams & Ingle, 2025). In addition to a collaborative approach to assessment design, the student perspective provides a more contextual understanding of what factors promote independent learning and authenticity (Smolansky et al., 2023). This approach may also offer a more sustainable assessment template as AI technologies become more sophisticated in the future.

We therefore present a case study on the integration of generative AI into an undergraduate coursework assessment, as part of a UK university medical sciences program. The assessment invited students to critically evaluate AI-generated content within an authentic assessment framework, while engaging students with concepts related to AI literacy. The study is also informed by a student-as-partner approach, providing evidence that assessment design can benefit from student co-creation and partnership (Bryson, 2016; Cook-Sather et al., 2018), including a discussion surrounding AI-integrated assessment design (Williams & Ingle, 2025). To explore student perspectives on AI integration in university assessment, we report questionnaire and focus group findings on students' experiences critically evaluating AI-generated scientific output in their assessments and broader learning.

## Methods

### Case Study: Integrating AI into Coursework Assessment

We present a case study of a coursework assessment, which was a component for a second year undergraduate BSc module at a leading UK university. The assessment structure is presented as an example of how AI can be integrated into the structure of coursework assessment, while retaining traditional elements of scientific writing and critical evaluation. The AI-integrated coursework was also designed to allow students to engage in AI literacy competencies. Students were asked to critically evaluate a grant proposal that had previously been generated by generative AI (ChatGPT 3.5, <https://openai.com/index/chatgpt/>). This version of ChatGPT was the best version available at the inception of the assessment re-design. The study was undertaken in the 2023/2024 academic year.

Research grant proposals are familiar documents that provide an overview of the research project's objectives, methodology and anticipated outcomes. As such, the assessment represents a form of authentic assessment, reflecting professional practice in scientific research environments. As generative AI is becoming more widespread and accessible, it can be a useful tool to assist in scientific writing, including the grant writing process. However, it is important to consider the ethical implications and scientific accuracy of AI-generated output, and the need for critical thinking to maintain the integrity and quality of scientific research and writing. The assessment therefore was designed around learning outcomes that reflected scientific understanding, independent engagement

with the scientific literature and critical evaluation of AI generated content. The third learning outcome also represented a way to promote AI literacy proficiencies.

The learning outcomes for the assessment were three-fold:

1. Describe the etiology, epidemiology, cellular, molecular and pathogenic mechanisms of a human disease.
2. Engage with and consolidate the scientific literature.
3. Critically evaluate the limitations and capabilities of ChatGPT-generated scientific content.

Students were provided with coursework workshops that outlined the assessment purpose and desired learning outcomes and included a mandatory formative assessment that allowed them to practice for the summative assignment. The marking criteria are outlined in Table 1 and were designed so students could critically evaluate the full scope of the AI generated grant proposal across five domains. Across the five domains, tutors (academics responsible for teaching and supporting students on the module) were able to assess students on whether they met the three learning outcomes.

**Table 1**

*Marking criteria for module coursework assessment*

| Criteria  | Scientific Accuracy | Scientific Background | Rationale for the Study | Experiential Design | Outcome and Critical Evaluation |
|-----------|---------------------|-----------------------|-------------------------|---------------------|---------------------------------|
| Weighting | 20%                 | 20%                   | 20%                     | 20%                 | 20%                             |

**Institutional AI and Assessment Policy**

The authors’ institution has a robust AI and assessment policy. The policy is structured on a tiered traffic-light system consisting of the following three categories:

Category 1 - GenAI Tools Cannot Be Used. The use of AI is strictly prohibited. The assessment evaluates skills where AI substitution is inappropriate. For context, this is the default setting for in-person proctored exams, practicals, and oral assessments.

Category 2 - GenAI tools can be used in an assistive role. Students are permitted to use GenAI in a limited way. The student should still be the author of their own work and GenAI should not be used for completing the assessment (entirely or only in part) on the student’s behalf.

Category 3 - GenAI has an integral role. GenAI is used as a primary tool during the assessment process. The assessment provides an opportunity to demonstrate effective and responsible use of GenAI. Guidance in using the relevant tools should be provided by the tutor in lectures, seminars or workshops. This includes generating initial content to be critiqued by students.

For the purposes of the re-designed assessment presented in the current case study, the assessment was considered a Category 3 assessment, whereby the grant proposal was initially generated by

ChatGPT and the content critiqued by students, which was central to the assessment task. Tutors provided mandatory generative AI literacy workshops to support students throughout the module and for the summative assessment. These included an overview on the basics of AI literacy, such as limitations and capabilities of generative AI, systemic bias, hallucinations and misinformation, and responsible and ethical use of AI (e.g. validation of AI generated outputs, data security and sustainability). An additional tutor-led workshop provided an opportunity for students to engage in a formative assessment that included a mock grant proposal on an unrelated human disease and critical evaluation exercise.

## Questionnaire

The research conducted in this study received ethical approval from UCL Research Ethics Committee (Project i.d. 6006/002). Invited participants were drawn from the same undergraduate cohort that partook in the module coursework assessment. Participants were provided with a project information sheet and asked to complete a study consent form prior to completing the questionnaire. All submitted responses were anonymized. The main research questions were:

- RQ1. What are the students' experiences and perceptions of using generative AI in their studies?
- RQ2. What are the students' experiences and perceptions of using generative AI in assessments?

The questionnaire comprised a combination of five-point Likert scale questions and open-ended questions, to capture participant perspectives and opinions on the research themes. Five-point Likert scale questions comprised the following responses: 1) strongly disagree; 2) disagree; 3) neither agree nor disagree; 4) agree; 5) strongly agree. The full questionnaire can be found in the supplementary material (Appendix A).

## Statistical Analysis

For the analysis of questionnaire responses to the Likert scale questions, a combination of descriptive statistics and One-Sample Wilcoxon Signed Rank Test analysis was performed using SPSS software (IBM). The mid-point response (neither agree nor disagree) was used to infer response divergence. The median and mode were calculated for each response, as this represented ordinal data, and the distribution of observations displayed as stacked bar charts. Binomial responses were analyzed using One-Sample Binomial Test and a Chi-squared test. A p-value < 0.05 was considered to be statistically significant.

## Focus Group

The focus group received ethical approval from UCL Research Ethics Committee (Project i.d. 6006/002). Participants were provided with a project information sheet and asked to complete a study consent form prior to taking part. Participants were provided with an anonymous identifier so that they could not be identifiable in the transcription. The focus group included a third research question:

- RQ3. What are the student perceptions on the broader implications of generative AI?

The focus group was led by the authors and began with an outline of the project, the aims of the research and an outline of the instructions for participants. Participants were then asked to discuss several predetermined questions about their experiences and perceptions of using AI in their assessment and studies, which provided a framework for the focus group. The focus group was undertaken online and the audio and video recorded using Microsoft Teams. The recording was stored securely on an institutional server and only the authors were allowed access. An anonymized transcription of the audio recording was made, reviewed and edited for accuracy by the authors. The audio and video recording was then destroyed to ensure General Data Protection Regulation (GDPR) and institutional data security compliance.

### Thematic Analysis

Inductive thematic analysis of the transcript was undertaken according to the methods of Braun and Clarke (2006) and the guidelines according to the Association for Medical Education in Europe (AMEE) (Braun & Clarke, 2006; Kiger & Varpio, 2020). Open text responses to questionnaire questions were analyzed for keywords (codes) and organized into emergent themes. Coded text was grouped and developed into themes using NVivo software by grouping similar phrases or repeated concepts to form coherent themes (Appendix B). A summary for each theme is provided. For the focus group analysis, separate thematic analysis was performed on each of the research questions, to identify data codes. Coded text was grouped and developed into themes using NVivo software (Appendix C). Codes were then reviewed independently to ensure that they fit coherently into the themes. In this way, thematic analysis was systematically applied to the text, ensuring a robust and reliable identification of codes and emergent themes. A summary of each theme is provided. Codes were used to identify and annotate the transcript and relevant quotations from participants were extracted from the text.

### Evaluation of Student Outcomes

To examine whether the introduction of a redesigned coursework assessment incorporating generative AI had any deleterious effects on student outcomes, a retrospective comparative analysis of module performance data was conducted. This analysis therefore included a fourth research question:

- RQ4. Did the introduction of a redesigned coursework assessment incorporating a generative AI component have any deleterious effect on student academic outcomes?

Student achievement data were collected from four academic years spanning two years before and two years after implementation of the redesigned assessment. The pre-intervention period comprised the 2021/2022 and 2022/2023 academic years, during which the original assessment design was used. The post-intervention period comprised the 2023/2024 and 2024/2025 academic years, following implementation of the redesigned coursework assessment that included a generative AI component. For each academic year, cohort size (N), mean module mark (%), score range (%), and standard deviation (%) were extracted from institutional assessment records. A Cohen's d test and Welch t-test were performed to evaluate differences in student outcome and performance pre- and post-intervention.

## Results

The study aimed to explore the student perspective on incorporating generative AI (ChatGPT) into coursework assessments. A mixed methods approach was used comprising a questionnaire and a structured focus group. The questionnaire covered student familiarity and comfort with generative AI, perceived educational value, ethical considerations and views on academic misconduct (RQ1 and RQ2). The focus group further explored student experiences and perceptions of generative AI in their studies and assessments and included a broader discussion on the wider implications of AI (RQ3).

### Questionnaire and Focus Group Characteristics

Participants were second year undergraduate students studying a module in which the coursework assessment was redesigned to incorporate an element of ChatGPT. Students were tasked with critically evaluating the scientific output generated by ChatGPT. Out of 230 students enrolled in the module, 30 completed and returned the questionnaire (13% response rate). This included a combination of UK and international students (Table 2). The focus group enlisted seven participants from the pool of those who completed the questionnaire.

**Table 2**

*Questionnaire and focus group characteristics (n = 30)*

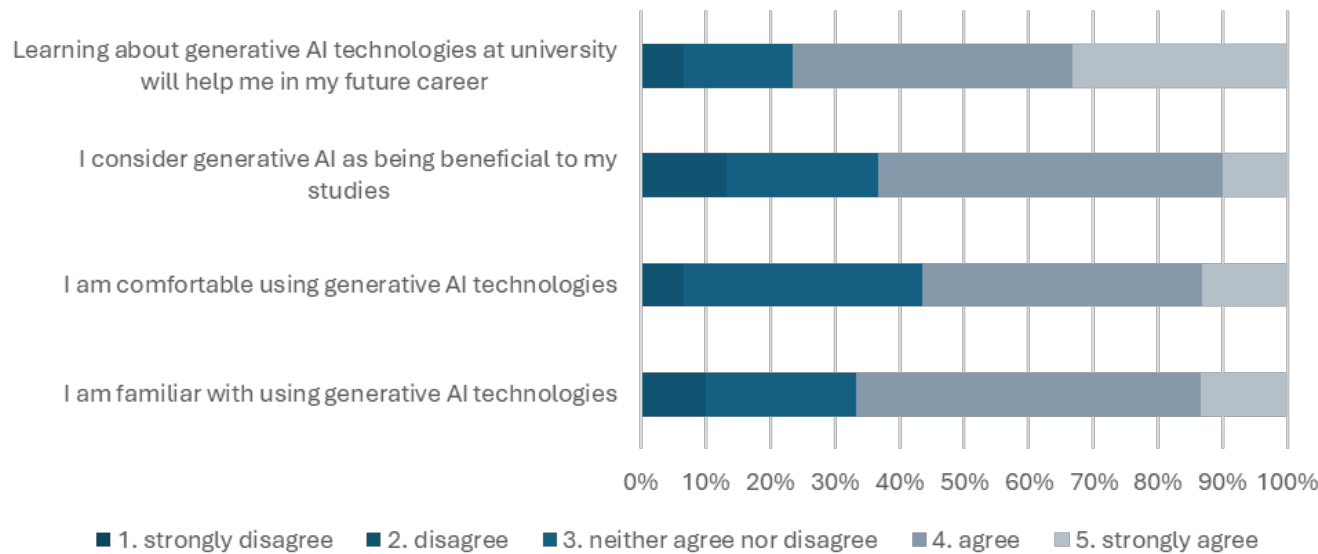
| Data Point                          | Number | Percent |
|-------------------------------------|--------|---------|
| Number of questionnaire respondents | 30     | 13%     |
| UK students                         | 12     | 40%     |
| International students              | 18     | 60%     |
| English first language              | 16     | 53.3%   |
| English not first language          | 14     | 46.7%   |
| Number of focus group participants  | 7      | 23.3%   |

### Student Familiarity with Generative AI

The questionnaire was first designed to ascertain the level of familiarity and comfort that students consider they have regarding the use of generative AI. The majority of questionnaire participants either agreed (53.3%) or strongly agreed (13.3%) that they were familiar with using generative AI tools (Figure 1 and Table 3). Of the remaining participants, none strongly disagreed and few disagreed (10%), with the remaining neither agreeing nor disagreeing (23.3%). The overall response therefore suggested that most participants were familiar with using generative AI tools ( $p < 0.001$ ). When asked whether they felt comfortable using generative AI tools (Figure 1 and Table 3), the majority reported that they either agreed (43.3%) or strongly agreed (13.3%), with none strongly disagreeing and few disagreeing (6.7%). The remaining participants neither agreed nor disagreed (36.7%). The overall response therefore suggested that the majority of participants were comfortable with using generative AI tools ( $p < 0.001$ ).

**Figure 1**

*Student familiarity with and perceptions of generative AI at university*



**Table 3**

*Student Familiarity with Generative AI*

| Item                                                                                     | Median    | Mode      | One-sample Wilcoxon signed ranked test |
|------------------------------------------------------------------------------------------|-----------|-----------|----------------------------------------|
| I am familiar with using generative AI technologies                                      | 4 (agree) | 4 (agree) | $p < 0.001$                            |
| I am comfortable using generative AI technologies                                        | 4 (agree) | 4 (agree) | $p < 0.001$                            |
| I consider generative AI to be beneficial to my studies                                  | 4 (agree) | 4 (agree) | $p < 0.001$                            |
| Learning about generative AI technologies at university will help me in my future career | 4 (agree) | 4 (agree) | $p < 0.001$                            |

### Student perceptions of AI in study

The next question was designed to ascertain the extent to which students perceived generative AI to be useful in their studies. Most participants either agreed (53.3%) or strongly agreed (10%) that using generative AI tools was beneficial for their studies (Figure 1 and Table 3). None of the participants strongly disagreed, with the remaining who disagreed (13.3%) or neither agreed nor disagreed (23.3%). Overall, the results indicated that most participants thought that generative AI tools were beneficial for their studies ( $p < 0.01$ ). In a follow-up questions participants were asked whether they considered learning about generative AI tools in their studies would be beneficial for their future careers (Figure 1 and Table 3). The majority of participants agreed (43.3%) or strongly agreed (33.3%), with none

strongly disagreeing, only 6.7% disagreeing and the remaining neither agreeing nor disagreeing (16.7%). Therefore, the results strongly indicated that students agreed that learning about generative AI tools would be beneficial for their future careers ( $p < 0.001$ ).

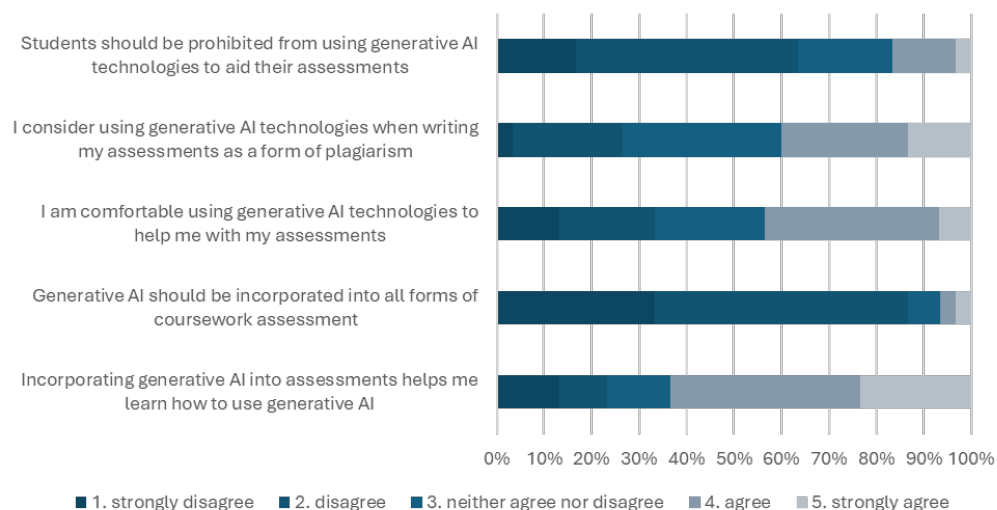
## Student Perceptions of Generative AI in Assessments

As the study was conceived following the redesign of a coursework assessment component, an important aspect of the study was to ascertain student perceptions on incorporating generative AI into the assessment structure, whereby a grant proposal was initially generated by ChatGPT and the content subsequently critiqued by students. In response to the statement, incorporating generative AI into assessments helps me learn how to use generative AI, 40% of participants agreed and 23.3% strongly agreed (Figure 2 and Table 4). Of the remaining responses, 13.3% strongly disagreed, 10% disagreed, and 13.3% neither agreed nor disagreed. Therefore, while the majority of respondents agreed that incorporating generative AI into assessments helps participants the overall response was varied ( $p > 0.05$ ). However, when asked whether generative AI should be incorporated into all forms of coursework assessment, the response was more definitive (Figure 2 and Table 4). Most participants either strongly disagreed (33.3%) or disagreed (53.3%), compared to only 3.3% that agreed or 3.3% that strongly agreed (the remaining 6.7% neither agreed nor disagreed). Therefore, this suggests that most respondents did not consider that generative AI should be incorporated into all forms of coursework assessment ( $p < 0.001$ ).

When asked whether participants were comfortable using generative AI technologies to help with assessments, the overall response was mixed ( $p > 0.05$ ). With 13.3% strongly disagreeing, 20% disagreeing, 36.7% agreeing and 6.7% strongly agreeing (Figure 2 and Table 4). The remaining respondents neither agreed nor disagreed (23.3%). Therefore, these results indicate that participants had varying levels of comfort using generative AI in coursework assessments ( $p > 0.05$ ).

**Figure 2**

### *Student Perceptions of Generative AI in Assessments*



### Student Views on Plagiarism

The last section of the questionnaire aimed to ascertain student views on whether they consider AI use to be a form of plagiarism and whether AI should be prohibited from assessments. In response to the question, I consider using generative AI technologies when writing my assessments as a form of plagiarism, the results indicated that participants had a varied opinion (Figure 2 and Table 4;  $p > 0.05$ ). Most participants neither agreed nor disagreed (33.3%), with 3.3% strongly disagreeing and 23.3% disagreeing. Only 26% of participants agreed and 13.3% strongly agreed that using generative AI technologies when writing assessments is a form of plagiarism.

When asked whether students should be prohibited from using generative AI technologies to aid their assessments, the majority of students disagreed (46.7%), with 16.7% participants strongly disagreeing (Figure 2 and Table 4). Of the remaining participants, 20% neither agreed nor disagreed, 13.3% agreed and only 3.3% strongly agreed. Therefore, the overall sentiment suggests that participants did not think that students should be prohibited from using generative AI in their assessments ( $p < 0.01$ ).

**Table 4**

*Student Perceptions of Generative AI in Assessments*

| Item                                                                                           | Median       | Mode         | One-sample Wilcoxon signed ranked test |
|------------------------------------------------------------------------------------------------|--------------|--------------|----------------------------------------|
| Incorporating generative AI into assessments helps me learn how to use generative AI           | 4 (agree)    | 4 (agree)    | $p > 0.05$                             |
| Generative AI should be incorporated into all forms of coursework assessment                   | 2 (disagree) | 2 (disagree) | $p < 0.001$                            |
| I am comfortable using generative AI technologies to help me with my assessments.              | 3 (neutral)  | 4 (agree)    | $p > 0.05$                             |
| I consider using generative AI technologies when writing my assessment as a form of plagiarism | 3 (neutral)  | 3 (neutral)  | $p > 0.05$                             |
| Students should be prohibited from using generative AI technologies to aid their assessments   | 2 (disagree) | 2 (disagree) | $p < 0.01$                             |

### Overall Student Use of AI in Studies

The final closed question simply asked whether students had ever used generative AI in their studies. Most participants responded yes (93.3%), indicting the widespread use of generative AI among the participants sampled ( $p < 0.0001$ ). This result is aligned with other recent studies on student engagement with generative AI (Stephenson & Armstrong, 2026).

### Benefits and Challenges of Using Generative AI

Further analysis of open questions indicated that users predominantly value AI for its ability to save time, simplify complex concepts, correct grammar, enhance professional writing, generate ideas and assist with research (Table 5 and Appendix B). These sentiments allude to the use of generative in positively supporting the coursework assessment process.

**Table 5**

*Benefits of Using Generative AI in Coursework Assessments*

| Theme                                   | Summary                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Time saving and efficiency              | Phrases like "saving time," "time saving," "reduces individual research time significantly," and "quicker to complete the coursework" reflect a strong theme of efficiency and time-saving benefits.                                                                                                                         |
| Clarification and simplification        | Concepts such as "explaining it in simpler terms," "simpler language," "clarification of instructions," and "understanding concepts" show a recurring theme of making complex information more understandable.                                                                                                               |
| Grammar, writing and sentence structure | Frequent mentions of "checking grammar," "sentence structure," and "word choice" indicate that grammar correction and sentence structuring are key uses. References to "make it sound more professional," "formally," and "comprehensible way" indicate a focus on improving the professionalism and readability of writing. |
| Idea generation and summarization       | Common references to "generate ideas," "summarize the concepts," "summarizing research papers," and "quick summary of essays" highlight a theme of using AI for idea generation and summarizing information.                                                                                                                 |
| Research Assistance                     | Terms like "research," "literature research," "relevant published paper," and "research papers" suggest that AI is frequently used to aid in research processes.                                                                                                                                                             |
| Help with Coursework                    | Statements about "completing the coursework," "providing areas to look into further," and "helping topics that you don't understand" show that AI is often used to support academic work.                                                                                                                                    |

Thematic analysis of responses regarding the challenges associated with using generative AI in coursework assessment indicate that users predominantly had concerns about the accuracy, reliability, outdated information, biases, the lack of reliable references and potential for misleading information from AI generated output (Table 6). In addition, respondents worried about the temptation to misuse AI for academic purposes, the implications for plagiarism and academic integrity and raised concerns regarding inequality of access and performance issues.

**Table 6**

*Challenges of Using Generative AI in Coursework Assessments*

| Theme                    | Summary                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accuracy and reliability | Phrases like "not always accurate," "can be inaccurate or misleading," "provides some incorrect answers," and "accuracy of information not good" indicate a strong concern about the accuracy and reliability of AI-generated content. Concepts such as "misleading," "false information," "fake information," and "gaps in information" highlight the issue of AI potentially providing incorrect or deceptive information. |
| Lack of references       | Frequent mentions of "not able to provide references," "no references with the info provided," and "cannot provide beneficial references" show a recurring theme of AI's inability to provide verifiable sources. Common references to "lack of most recent information," "outdated," and "not up-to-date" suggest that AI may often provide outdated information.                                                           |

| Theme                      | Summary                                                                                                                                                                                                                          |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dependence and temptation  | Statements like "tempted to just ask the question," "tempting to use generative AI technologies for coursework," and "making us lazier" reflect concerns about dependence on AI and the temptation to use it for academic tasks. |
| Plagiarism and cheating    | Terms like "plagiarism," "cheating," "considered plagiarism," and "preventing plagiarism" indicate significant worries about the potential for academic dishonesty facilitated by AI.                                            |
| Bias and inequality        | Concerns about "prone to biases," "bring inequality," and "representative of students' own logic" reflect issues related to biases in AI responses and the fairness of its use in academic settings.                             |
| Processing and performance | Statements about "slow internet," "servers sometimes lag," and "heavy traffic problem" highlight performance-related issues with using AI.                                                                                       |

## Focus Group

The focus group ( $n=7$  participants) utilized structured questions to further gain insight into student perspective of using generative AI in university studies and assessment (RQ1 and RQ2). Focus group responses to structured questions were analyzed by thematic analysis (Appendix C). The analysis highlighted the varied experiences and uses of ChatGPT among university students, encompassing its role as a summarizing tool, language aid, revision resource and an assistant for assessments. The need for careful verification and effective prompting was a common theme (Table 7), reflecting both the benefits and challenges of integrating AI into academic routines.

**Table 7**

### *What do Students use Generative AI for at University?*

| Theme                                   | Summary                                                                                            | Example Responses                                                                                                                                                                                                                |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Generative AI for student study support | Useful as a summary tool to condense large amounts of information and to compare similar concepts. | "... if I have lots of stuff to read through, but I only have limited amount of time, I'll probably ask ChatGPT to summarize it for me."                                                                                         |
|                                         | Useful for quick definitions and summaries, reducing the need to sift through extensive sources.   | "I tend to use ChatGPT when I'm trying to delve into specific definitions, and this may be if I've misunderstood the concept in class, so it's quite helpful because it's very direct compared to making a Google search."       |
| Generative AI for assessment support    | Useful as a starting point for assessments, and as a starting point for deeper research.           | "With regards to assessments, I've generally used it as a good gauge of what I need to start."                                                                                                                                   |
|                                         | Useful to explain MCQ answers and correct misunderstandings.                                       | "You can prompt it to give you references and that can be a useful starting point of where you want to build your search. You could use ChatGPT as initial essay and then research around it to help you improve your evidence." |
|                                         | Concerns about its limitations with regard to detail and specific higher education content.        |                                                                                                                                                                                                                                  |

| Theme                             | Summary                                                                                                                           | Example Responses                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AI capabilities and limitations   | Lack of trust and the need to verify information from ChatGPT due to potential inaccuracies and reliance on internet sources.     | “With the level of detail that we go into in our higher education, it's not really as specific, especially with a research focused degree.”<br>“When I'm going through more detailed things and more specific things, it really struggles.”<br>“I don't really take everything of what it says as fact, so I use it as a way to start off.” |
|                                   | Concerns with the potential for cumulative errors in ChatGPT's responses, stressing careful cross-referencing with other sources. |                                                                                                                                                                                                                                                                                                                                             |
| AI technology and ethics training | Highlighted the importance of precise prompting for quality responses from ChatGPT.                                               | “You want to be careful how you prompt it, to give you what you want.”                                                                                                                                                                                                                                                                      |
|                                   | Acknowledges familiarity and training and users become increasingly efficient with experience.                                    | “...as you use it more you get an understanding of what you can use to prompt it and you want to work out.”                                                                                                                                                                                                                                 |
|                                   | There was a strong emphasis on the need for effective training in prompt engineering and the ethical use of AI.                   | “To level the playing field, it would probably be best to catch everyone up on the best technology.”                                                                                                                                                                                                                                        |
|                                   | Concerns about bias.                                                                                                              | “I would definitely say that the biases with ChatGPT might be a problem academically or on university campuses.”                                                                                                                                                                                                                            |

Students found the incorporation of ChatGPT into coursework innovative and useful for understanding AI’s capabilities and limitations (Table 8). However, they faced challenges with the clarity of objectives, the repetitive nature of AI content, and the need for more detailed guidance on evaluating AI versus scientific content. Overall, the experience was seen as a valuable exercise in critical thinking and independent research, despite the difficulties encountered.

**Table 8**

*What is the student perspective of incorporating ChatGPT into coursework design?*

| Theme                        | Summary                                                                                                                | Example responses                                                               |
|------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Innovative coursework design | Liked the innovation in coursework design and the opportunity to critique the capabilities and limitations of ChatGPT. | “I like the innovation in the coursework because this is such a new topic.”     |
|                              | Appreciated the understanding of a grant proposal structure.                                                           | “Gave me an understanding of how a grant proposal is supposed to look like.”    |
|                              |                                                                                                                        | “As students, we looked into how we can improve it [the coursework] and in that |

| Theme                           | Summary                                                                                                                                                          | Example responses                                                                                                                                                         |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Developing student learning     | Highlighted the exercise's focus on critiquing AI's limitations rather than advancing scientific knowledge.                                                      | sense, I think the assessment did serve its purpose.”                                                                                                                     |
|                                 | Considered this approach could have real-life applications and prepare students for future careers in AI development.                                            | “Trying this new tool out, and seeing what it can and can't do was quite interesting and seeing how it was applied to the scientific context.”                            |
|                                 | Proposed incorporating ChatGPT into assessments requiring extensive independent research.                                                                        | “I also believe that the use of AI highlights and emphasizes how important having intuition and independent thinking is, which are not replaceable by AI.”                |
| Institutional considerations    | Appreciated the exercise for exposing the gaps in AI-generated content, prompting independent research and critical evaluation.                                  | “I think it was quite innovative because we had to do the research ourselves. We had to fill the gaps.”                                                                   |
|                                 | Highlighted the need for institutional support, such as providing student subscriptions to ChatGPT 4, ensuring all students have equal access to advanced tools. | “For example, if we use ChatGPT 4 then it would make sense that all students have access to that and perhaps you need a student subscription.”                            |
| Challenges in coursework design | Supportive of embedding AI into taught curricula.                                                                                                                | “[...] AI embedded in the curriculum, is more about exposing people to the ins and outs of how to use ChatGPT.”                                                           |
|                                 | Highlighted the uncertainty in dealing with AI-generated content.                                                                                                | “I struggled to pick up where the AI itself was falling short and where the science it was suggesting was falling short and making that distinction was quite difficult.” |
|                                 | Considered improvements to the marking criteria were necessary to further help students complete the task.                                                       | “I was finding it difficult to critique where the science started and where the AI's own struggles ended.”                                                                |
| AI integration                  | Considered the scientific engagement less stimulating due to the superficial nature of AI-generated content.                                                     | “It may have been more helpful to release the exact aims of what you wanted us to achieve. Was it critical evaluation of the science, or was it evaluation of ChatGPT?”   |
|                                 | Proposed integrating AI into every module or creating a compulsory module on AI usage.                                                                           | “As AI continues to develop and we incorporate it more into daily life, it should become incorporated into every module.”                                                 |
|                                 | Suggested developing dedicated GPTs for specific coursework or modules, enhancing accuracy and applicability.                                                    | “With the institutional access, you can have any custom built GPT that would allow everyone to try out on a module.”                                                      |

The final element of the focus group aimed to gain student perspectives on the broader implications of generative AI use (RQ3). Focus group participants recognized both the potential benefits and risks of

generative AI in a broader, societal context (Table 9). They highlight the importance of education, ethical considerations and maintaining a balance between leveraging AI’s capabilities and preserving essential human skills. Concerns about job displacement, misinformation and the broader societal impacts of AI were considered to be important for the wider integration of AI technologies across society.

**Table 9**

*What do students consider to be the broader impacts of generative AI?*

| Theme                            | Summary                                                                                                                                    | Example Responses                                                                                                                                                                                                                     |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Embracing AI technology          | Concerned that AI and automation could exacerbate inequality by replacing human jobs.                                                      | “I personally believe that the progress and the spread of use of AI is irreversible and somehow inevitable.”                                                                                                                          |
|                                  | Advocated for embracing AI while emphasizing independent thinking and intuition, which AI cannot replace.                                  | “Although it's quite quick with the responses, I search to see if I can find the same information in journals that pertain to that specific thing, so double verification is essentially what I mean.”                                |
|                                  | Participants drew parallels to the initial reactions to Google and other technological advancements.                                       | “This is similar when we first had Google, instead of the traditional way of looking at books, so I think it [AI] is a tool that is more helpful and it is saving us more time.”                                                      |
|                                  | Cautions against over-reliance on ChatGPT, which could undermine critical thinking and creativity.                                         | “Video clips that are incredibly realistic and photos and art that can be generated so quickly and pieces of literature that can be generated in seconds.<br>All of that creative work is where I think a lot of questions will lie.” |
| Enhancing productivity           | Positive regarding how AI saves time on routine tasks, allowing more focus on independent thinking.                                        | “It's quite quick to return to your responses.”                                                                                                                                                                                       |
|                                  | Emphasized the need to use AI tools thoughtfully and to verify outputs.                                                                    | “It's a really useful tool and I saves lots of time, especially if we're doing really repetitive things like planning or summarizing.”                                                                                                |
| Societal and health implications | Emphasizes the need for education on healthy interaction with AI.                                                                          | “We should keep critical in terms of the answers that have been generated.”<br>“In the future, being able to interact with technology in a healthy way is going to be very important.”                                                |
|                                  | Concerns about political implications of AI-generated content, particularly the risk of misinformation and its potential to incite unrest. | “I would say the social or political implications would also be: what's real and what isn't?”                                                                                                                                         |

| Theme                            | Summary                                                                                                                            | Example Responses                                                                                                                                                                                                       |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use of AI in biomedical research | Stressed the importance of educating people on how to interact with AI in a healthy way from a young age.                          | "You should interact with it in a healthy and controlled way so that you don't dull your critical thinking skills."                                                                                                     |
|                                  | Stresses the need for education on managing AI use to avoid negative consequences on critical thinking and mental health.          | "I suspect it will just create more inequality between people in terms of automation of jobs."                                                                                                                          |
|                                  | Positive about AI fostering interdisciplinary research by providing broad knowledge across fields and facilitating collaborations. | "It can really help in the future, especially in the research field to promote interdisciplinary research."                                                                                                             |
|                                  | Acknowledged AI's potential for accelerating research.                                                                             | "It can actually promote collaboration with other people from different fields."<br>"The balance between being open minded about its use, but also cynical about what it can and can't do, I think is quite important." |
|                                  | Cautious about potential detrimental effects of AI.                                                                                |                                                                                                                                                                                                                         |

Evaluation of Student Outcomes

To ascertain whether the intervention of introducing a re-designed coursework assessment that incorporated an element of generative AI had any deleterious effects on student outcome (RQ4), we compared the average student grades two years prior and two after the module assessment was re-designed (referred to as the intervention). Pre-intervention years were 2022/2023 and 2021/2022, while post-intervention years were 2024/2025 and 2023/2024 (Table 10). A Cohen's d test was performed to calculate statistical differences between pre- and post-intervention groups (Cohen's  $d = 0.000016$ ). In addition, a Welch t-test was performed to calculate differences in student performance pre- and post-intervention ( $p > 0.5$ ). These indicate that no differences in student outcome or performance were observed after the intervention, indicating no deleterious effects resulting from the redesign of the coursework assessment to include an AI component.

Table 10

Comparative Outcomes Pre- and Post-Intervention

| Variable      | Post-Intervention |              | Pre-Intervention |           |
|---------------|-------------------|--------------|------------------|-----------|
| Academic Year | 2024/2025         | 2023/2024    | 2022/2023        | 2021/2022 |
| N             | 215               | 228          | 160              | 117       |
| Average       | 65%               | 61%          | 60%              | 67%       |
| Range         | 12.5-84.25%       | 22.37-81.11% | 25.5-82.25%      | 47-81%    |
| S.D.          | 10.19%            | 8.95%        | 9.06%            | 9.26%     |

## Discussion

The aim of the study was to evaluate student perspectives on incorporating generative AI into coursework assessments and to gain a broader insight into how students consider generative AI technologies to be of value in their studies. To achieve this, we conducted an anonymous questionnaire, followed by a focus group to further explore student opinions and perspectives on using AI at university, with an emphasis on AI use in assessments.

Assessments are a known key driver of student learning (Biggs, 1998; Rust, 2002). Therefore, the questionnaire was designed to capture student perspectives across the domains of both study and assessment. The recent emergence and widespread adoption of generative AI technology pose significant challenges for the higher education sector (Kuleto et al., 2021). However, the impact of generative AI on university assessment is yet to be fully realized. Traditional assessments may be particularly affected, with concerns around academic integrity and the potential for student cheating. Despite numerous guidelines and conjecture on how to mitigate for AI in assessments, studies on the impact of assessment changes from a student perspective are limited and therefore of value for further investigation (Khlaif et al., 2025; Perkins et al., 2024).

Redesigning coursework assessment to counter generative AI interference can occur at several levels. In-person assessments largely avoid AI use, designing coursework to mitigate for AI may reduce its impact, while designing coursework that incorporates AI may offer a more progressive and authentic experience (Williams, 2025). Here we redesigned a module coursework to incorporate an element of generative AI, whereby we instructed ChatGPT 3.5 to write a grant proposal. Students were then tasked to critique the ChatGPT generated output according to defined marking criteria. The assessment was designed to enable students to critically evaluate AI generated scientific content, rather than apply AI tools directly to their submission. This satisfied the core learning objectives of the module, to promote critical thinking and to engage students in AI literacy competencies. Under institutional policies, this assessment was also considered to be a high level, category 3 assessment, whereby AI was used to generate content, and students were tasked to critically evaluate the output. Considering the integration of AI into assessment structures has received limited consideration in the literature, the reception of students to such an approach, and their perspective of AI-integrated assessments, warranted further exploration.

The questionnaire revealed that students were both familiar and comfortable using AI technology. This echoes findings from recent HEPI surveys of UK HE students, which reveal widespread use of ChatGPT for study support (Freeman, 2025). In our study nearly all students had used AI in their studies (93.3%), highlighting the extent that generative AI is embedded in the student learning experience. This has immediate implications for university assessments and strengthens the case for higher education to move beyond AI prohibition and towards further integration of AI into teaching and learning practices (Gamage et al., 2023; Salinas-Navarro et al., 2024a, 2024b). Regarding AI use, this is also highly relevant for assessment changes. As Corbin et al., (2025) argue, discursive changes to assessment may be insufficient to counter the influence of AI but rather deeper structural changes that integrate AI into the assessment design may offer a more sustainable solution (Corbin et al., 2025; Williams, 2025).

Students generally reported valuing AI as a supportive tool, particularly for clarifying concepts, summarizing information and saving time. These findings align with the thematic analysis, which highlighted efficiency, simplification and idea generation as major benefits. Similarly, generative AI is seen as augmenting, rather than replacing, student learning, while retention of critical thinking and problem-solving skills are necessary for the preservation of essential student competencies (Borger et al., 2023; Ruiz-Rojas et al., 2024). For example, a recent survey of undergraduates in the U.S. highlighted benefits, such as feedback and study support, although concerns remain about academic integrity, information accuracy and degradation of critical thinking (Pitts et al., 2025). These findings align with perceived limitations on AI's epistemic ability and underscore the importance of teaching verification strategies, source evaluation and critical appraisal skills (Ng et al., 2023). Importantly, our results show that students consider that AI literacy will be beneficial for their future careers, supporting arguments that higher education has a responsibility to prepare graduates for AI-driven workplaces (Aoun, 2024; Luckin et al., 2016).

Student views on incorporating AI into assessments were more mixed. However, many acknowledged that the AI-integrated coursework helped them to learn how to use AI critically, with 63.3% agreeing or strongly agreeing that integrating AI into assessment was beneficial. The assessment design and support package provided to students therefore aligned with the learning outcomes, in particular the third learning outcome: critically evaluate the limitations and capabilities of ChatGPT generated scientific content. Although no empirical data was gathered regarding impacts on student AI literacy competencies, open ended survey responses indicated that students found generative AI to be beneficial for several aspects of assessment related activities, including efficiency gains, clarification and simplification of concepts, and research assistance. This may also demonstrate that AI provides a useful tool for engaging in independent research, although further evaluation and exploration is required to establish any beneficial effects on learning. The focus group further identified positive perceptions of integrating AI into coursework assessments, for example by having the opportunity to critique AI generated output. This allowed students to appreciate the limitations of AI (such as superficiality) and its scientific accuracy, thereby linking the assessment task to the learning objective, and simultaneously engaging students with AI literacy proficiencies. Students also expressed the opinion that AI integration into their learning experience was a valuable experience at university, which could be beneficial for their future careers. It may therefore be beneficial to proactively engage students with generative AI in a safe and transparent environment during their studies at university to better prepare them for the workplace.

Despite the positive attitudes towards the specific AI-integrated assessment, the majority of students did not support incorporating generative AI into all forms of coursework. This reflects both excitement about innovation and caution about over-reliance on AI. Studies on ChatGPT's influence across disciplines show that while AI can support critical evaluation and independent judgment, outcomes vary significantly depending on how AI is used and integrated (Gunsaldi et al., 2025; Sardi et al., 2025). Focus group participants emphasized that the assessment promoted their critical thinking and research independence, but they also recognized the limitations of AI. Furthermore, they noted flaws in the design of the AI-integrated assessment, as they had difficulty distinguishing between shortcomings in AI-generated content and weaknesses in the underlying science. These concerns suggest that while AI

integration can be pedagogically valuable, assessment designs must provide clear guidance on objectives, evaluation criteria and the scope of expected critique.

Our findings highlight student uncertainty about whether AI use constitutes plagiarism. While some perceived AI assistance as potentially dishonest, the majority did not consider AI use to be an act of plagiarism. The relationship between AI use and academic misconduct is complex, with students often questioning the clarity of institutional guidelines (Jiang et al., 2025), which may reflect the need for more effective student AI literacy support and training initiatives (Adamakis & Rachiotis, 2025; Annappureddy et al., 2025). In this study students expressed a desire for more institutional support in terms of embedding training into curricula, including guidance on prompt engineering, ethical use of AI and additional support to ensure equal access to AI technologies. Furthermore, the boundaries between acceptable and unacceptable AI use in the context of assessment are also unclear to students. While most students reported using AI for auxiliary tasks or assistance, such as research, writing support and conceptual understanding, using generative AI to directly generate assignments was not reported in this study. However, there is a growing body of evidence suggesting that students are increasingly using generative AI to cheat on written assignments (Newton, 2025; Stephenson & Armstrong, 2026). This indicates a need for more suitable approaches to coursework assessment in higher education, together with clearer institutional policies and AI literacy training to support their implementation.

In addition, many disagreed that the use of generative AI should be prohibited during assessments. This suggests a disconnect between institutional policy on AI use and student understanding of legitimate assessment practices. As detection tools remain unreliable and may disadvantage multilingual students (Corbin et al., 2026; Dalalah & Dalalah, 2023), a prohibitionist stance risks being both ineffective and inequitable. Instead, embedding explicit discussions of AI ethics and academic integrity into curricula could foster a shared understanding of responsible AI use. Furthermore, integrating AI into assessment structures supports the creation of more authentic forms of assessment, without disrupting the underlying academic rigor. This is supported by multi-year analysis pre- and post-intervention that indicated that the re-design of coursework assessment to incorporate AI did not adversely affect student outcomes or performance. Although longitudinal grade comparisons do not provide a direct causal effect of assessment redesign, the result does indicate that the approach to integrate AI into the assessment structure had no deleterious effect on student outcome. This is an important consideration for the redesign of further assessments across programs and for others contemplating incorporating AI into assessment structures.

Beyond assessment design, students recognized the societal implications of AI. They raised concerns about bias, misinformation, job displacement and the need to balance AI efficiencies with intrinsic critical thinking. These perspectives mirror global debates about AI's disruptive potential and that robust policies are required for the ethical integration of AI into education (Yusuf et al., 2024). Interestingly, students also proposed that universities provide institutional access to more advanced AI models, thereby ensuring equity of access to digital technologies. This raises important policy questions about resourcing to ensure fair digital inclusion across diverse student populations.

## Limitations and Future Studies

The main limitations of the study were the relatively small cohort size and the domain-specific student representation; in this case students studying medical science. Therefore, caution should be exercised when extrapolating these findings to the wider student body. It may be the case that respondents were also those students most keenly engaged with generative AI or those who had a more positive bias towards its application across their learning and assessment. Similarly, this may be true of the seven focus group participants, which may represent a limited range of perspectives, despite expressing both positive and negative attitudes towards AI use at university. Although the current study only represents a restricted student cohort, the key perspectives of students and the emergent conclusions are tractable to assessment design principles across higher education more broadly. However, future research should aim to gain the perspectives and opinions of more students across a wider range of disciplines, including those from STEM, social sciences, humanities and language studies. Those perspectives and experiences of interacting with generative AI are likely to differ between domains, which may impact the extent to which AI can be integrated successfully into coursework assessments.

The study largely represented a single post-interventional event and a selected coursework instant. Although we demonstrated that integrating AI into our coursework assessment had no detrimental effect on student outcome, further longitudinal studies will be required to address the longer-term impact on student learning and critical thinking. Additional studies within discipline-specific settings would also be of value, to assess which assessment modalities are best suited to preserve assessment authenticity while integrating generative AI into their core design structure. Such assessment designs would be further suited to student-staff co-design initiatives, whereby students act as equal partners in the iterative design and evaluation of appropriate coursework assessment formats.

## Conclusions

There is growing recognition that higher education must adapt to AI technologies and judiciously incorporate them into teaching, learning and assessment practices. It is recommended that higher education institutions move away from prohibitive and discursive AI assessment policies and towards structural assessment changes that integrate AI into assessments by design (Williams et al., 2025; Corbin et al., 2025). Alongside this, it will be important to establish clear guidelines that distinguish between acceptable and unacceptable AI use. Adopting AI literacy into curricula is challenging but essential to train our students for a future AI-driven society. This includes training in prompt engineering, how to undertake robust AI verification and guidance on the ethical use of AI. By adopting these approaches, universities can position themselves to safeguard academic integrity and equip students with essential skills for a rapidly evolving technological landscape.

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### About the Authors

Angela Tam, Senior Research Fellow, Research Department of Inflammation and Rare Disease, Division of Medicine, Faculty of Medical Sciences, University College London, [angela.tam@ucl.ac.uk](mailto:angela.tam@ucl.ac.uk)

David Abraham, Head, Research Department of Inflammation and Rare Diseases, Division of Medicine, Faculty of Medical Sciences, University College London, [david.abraham@ucl.ac.uk](mailto:david.abraham@ucl.ac.uk)

Andrew Williams, Professor, Department of Education, Division of Medicine, Faculty of Medical Sciences, University College London, [andrew.williams@ucl.ac.uk](mailto:andrew.williams@ucl.ac.uk)

## Appendix A: Questionnaire

Evaluation of student perceptions of AI technology in assessments.

Q1. Are you a UK or international student?

- a. UK
- b. International

Q2. Is English your first language?

- a. yes
- b. no

Q3. Have you ever used generative AI (e.g. ChatGPT, Bard, Bing) to assist your studies at university?

- a. yes
- b. no

Please rate the following statements that you consider best apply to you:

1. strongly disagree, 2. disagree, 3. neither agree nor disagree, 4. agree, 5. strongly agree)

Q4. I am familiar with using generative AI technologies.

Q5. I am comfortable using generative AI technologies.

Q6. I consider generative AI as being beneficial to my studies.

Q7. Learning about generative AI technologies at university will help me in my future career.

Q8. Incorporating generative AI technologies into coursework assessments is beneficial.

Q9. Incorporating generative AI into assessments helps me learn how to use generative AI.

Q10. Generative AI should be incorporated into all forms of coursework assessment.

Q11. I am comfortable using generative AI technologies to help me with my assessments.

Q12. I consider using generative AI technologies when writing my assessments as a form of plagiarism.

Q13. Students should be prohibited from using generative AI technologies to aid their assessments.

Open questions:

Q14. What do you consider to be the benefits of using generative AI technology during your coursework assessments?

Q15. What do you consider to be the challenges of using generative AI technologies during your coursework assessments?

## Appendix B: Questionnaire Keywords/Codes and Themes

Q13. Benefits of using generative AI in coursework assessment.

| Theme                                   | Keywords/codes                                                                                                                                                                                                                                        |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Time saving and efficiency              | saving time; time saving; reduces individual research time significantly; quicker to complete coursework                                                                                                                                              |
| Clarification and simplification        | Clarification of complex research; explaining it in simpler terms; simpler language; clarification of instructions; understanding concepts; helps focus on the main task                                                                              |
| Grammar, writing and sentence structure | checking grammar; check grammar mistakes; sentence structure; word choice; paraphrase my sentences; make it sound more professional; getting past writer's block; helps international students                                                        |
| Idea generation and summarization:      | generate ideas; summarize the concepts; summarizing research papers; quick summary of essays; summarizes the key points; extracting important information; outlines good points; start a topic                                                        |
| Research Assistance                     | research; literature research; relevant published paper; research papers; generalized source of information; answers to specific questions; summarizing pdfs                                                                                          |
| Help with Coursework                    | completing the coursework; providing areas to look into further; helping with topics that you don't understand; bullet points; starting point to begin the assessment; provide extra creative ideas; understanding the requirements of the assessment |

#### Q14. Challenges of using generative AI in coursework assessments

| Themes                     | Keywords/codes                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accuracy and reliability   | not always accurate; may be wrong inaccurate or misleading; provides some incorrect answers; accuracy of information not good; misleading; false information; gaps in information; fake information; lack of most recent information; outdated; not up to date; contradicts itself; not able to validate answers; cannot be trusted; writing style not specific |
| Lack of references         | not able to provide references; no references with the info provided; cannot provide beneficial references                                                                                                                                                                                                                                                      |
| Dependence and temptation  | tempted to just ask the question; tempting to use generative AI technologies for coursework; making us lazier; making us all brain dead                                                                                                                                                                                                                         |
| Plagiarism and cheating    | plagiarism; cheating; tempted to copy/paste the answer; use as their own work/ideas/research; use as a coursework generator; not representative of students own ability                                                                                                                                                                                         |
| Bias and inequality        | prone to biases; brings inequality; level of AI literacy; inequality in student use                                                                                                                                                                                                                                                                             |
| Processing and performance | slow internet; servers sometimes lag; heavy traffic problem; limited on the way of asking; prompting; limit on the number of words for the output; has trouble with memory                                                                                                                                                                                      |

## Appendix C: Focus Group Themes and Codes

### RQ 1. What do students use generative AI for at university?

| Theme                                   | Codes                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Generative AI for student study support | summary tool; specific definitions; idea generation; personal tutor; revision tool; summarizing readings; clarifying difficult concepts; creating revision quizzes; generating practice cases; clinical cases; filling knowledge gaps                                                                                                                 |
| Generative AI for assessment support    | proofreading resource; generate MCQs; assessment resource; drafting an essay; drafting essay plans; providing feedback; proofreading grammar; polishing language; overcoming writer's block; generating MCQs for practice; explaining MCQ answers; structuring assignments; building reference lists; creating tables/figures; assessment time-saver  |
| AI capabilities and limitations         | trustworthiness of AI output; accuracy of output<br>quick but unreliable; double-checking with textbooks; fact verification needed; hallucinated answers; not good at math/statistics; forgetting context; superficial responses; prompt-dependent output; fabricating references; independent research; independent creativity; repetitive AI output |
| AI technology and ethics training       | familiarization with ChatGPT; learn about AI tools; prompt engineering; need training in prompt engineering; embed into curricula; equitable access; equality of access; understanding AI ethics; learning responsible use; unfair advantage; ethical boundaries                                                                                      |

### RQ 2. What is the student perspective of incorporating ChatGPT into coursework design?

| Theme                           | Codes                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Innovative coursework design    | innovative coursework design; intellectually stimulating; AI-generated grant proposal; unique assessment approach; creative integration of AI; new learning experience                                                                                                                                                                                                                               |
| Developing student learning     | critical evaluation; learn from mistakes; identifying AI errors; filling knowledge gaps; critical evaluation; learning grant structure; independent research skills                                                                                                                                                                                                                                  |
| Institutional considerations    | institutional subscription; university policy; level playing field                                                                                                                                                                                                                                                                                                                                   |
| Challenges in coursework design | repetitiveness of coursework design; defining marking criteria; coursework design; issues with cheating; clarity of instructions; ambiguity of marking criteria; need for explicit aims; workload balance across sections; word count distribution issues; superficial AI text; repetitive answers; hard to separate AI vs science errors; difficulty critiquing vague outputs; unclear expectations |
| Integrating AI                  | dedicated GPT; custom GPT; independent thinking; curriculum; module                                                                                                                                                                                                                                                                                                                                  |

### RQ 3. What do students consider to be the broader implication of generative AI?

| Theme                            | Codes                                                                                                                                                                                                                                                                |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Embracing AI technology          | embracing AI technology; independent thinking; inevitable progression; comparable to Google; acceptance and adaptation                                                                                                                                               |
| Enhancing productivity           | time saving; quick response; time-saving tool; streamlining admin tasks; reducing repetitive work; boosting efficiency; faster access to information                                                                                                                 |
| Societal and health implications | political implications; human interaction; social and health issues; overreliance reduces critical thinking; loss of creativity; bias; misinformation in politics; social inequality of access; impact on mental health; addictive use of technology; job automation |
| Use of AI in biomedical research | interdisciplinary research; communication between two AI tools; collaboration; collaboration across fields; broad scientific knowledge; generating research ideas; limitations in niche scientific detail                                                            |