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*Original Paper*

# Exploring Faculty and Student Perspectives on Generative AI: Implications for Classrooms of the Future

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**Abstract**

Generative Artificial Intelligence (GenAI) has the potential to transform the education industry and lead to significant shifts in teaching and learning practices. This study explores the attitudes and usage of GenAI among faculty and students at the University of Westminster through surveys conducted in March and December 2023. The findings indicate a growing familiarity and confidence in using GenAI tools among academic colleagues, with a notable increase from March to December. While students' confidence in using GenAI also increased, their familiarity remained relatively stable. Both colleagues and students recognised the potential of GenAI to enhance teaching and learning experiences, particularly in areas such as personalised learning, adaptive learning, assessment, and feedback. However, concerns about academic integrity, dependence on technology, and ethical considerations persist. Variations in GenAI usage and attitudes across different disciplines suggest that each field's specific needs and contexts influence the integration of these tools. To successfully integrate GenAI into educational practices, strategies such as clear guidelines on ethical use, training for colleagues and students, and the development of GenAI-resistant assessments are crucial. The findings underscore the need for ongoing research and dialogue to fully realise the potential of GenAI in education while addressing the concerns and promoting responsible usage. The paper proposes that by harnessing the power of GenAI, universities can invigorate active learning through blended approaches and engage students in innovative ways, ultimately transforming the educational landscape. In this respect, the changing and more positive attitude towards GenAI observed in this study is an encouraging step forward.

**Keywords:** Generative Artificial Intelligence (GenAI), Higher Education, Classroom Design, Faculty Attitudes, Student Attitudes

## 1. Introduction

The rapid advancement of Generative Artificial Intelligence (GenAI) is leading to a significant shift in the educational landscape (Lee et al., 2023; UNESCO, 2023). University students and colleagues are increasingly using these powerful tools. It is crucial to explore their attitudes and the opportunities these tools offer inside and outside the classroom (Zawacki-Richter et al., 2019). The following paper aims to investigate the use of GenAI by teachers and students at a university and consider its implications for driving more active learning through blended or flipped learning approaches.

GenAI tools, such as ChatGPT and Microsoft Copilot, have the potential to revolutionise teaching and learning (Gimpel et al., 2023). These tools can, for example, assist in creating personalised learning materials, interactively generating content, and providing rapid feedback to students. As a result, students can engage with course material in new and innovative ways. At the same time, teachers can leverage these technologies to create more dynamic and engaging learning environments and potentially save some time.

The adoption of GenAI in educational settings has been met with enthusiasm and scepticism. While some educators and students readily embrace these tools, others express concerns about the potential for academic dishonesty, the reliability of generated content, and the impact on critical thinking skills (Yeralan and Lee, 2023., Michel-Villarreal et al., 2023). Alongside this are various questions about the ethical use of such tools and systems (see for example Zohny et al., 2023). Understanding these attitudes better is essential for developing effective strategies to integrate GenAI into educational practices.

Moreover, at universities that offer mainly face-to-face learning opportunities, GenAI can sensibly extend beyond the confines of the typical physical classroom. By harnessing these technologies, universities may better facilitate blended and flipped learning approaches, where students engage with course material or activities outside of class through AI-generated content and interactive experiences (Lee et al., 2023; Park and Doo, 2024). This shift towards more flexible and self-directed learning can empower students to take ownership of their education and enable teachers to dedicate more class time to active learning and collaborative activities. However, whilst blended and flipped learning approaches at universities offer numerous benefits, such as increased flexibility, personalisation, and active learning opportunities, their implementation has faced significant challenges (Rasheed et al., 2020; Akçayır, G., & Akçayır, M. 2018).

One often understated barrier to successful blended or flipped teaching is the nature of the physical learning space itself. The classroom space design can impede efforts to facilitate active student individual and group work (Saunders et al., 2017). Despite this, much literature about effective teaching (Arum et al., 2016) seems to assume that teachers can easily employ the most effective pedagogy. There is little or no mention of physical constraints on innovation in teaching practice. In contrast, the experience of the teaching staff can tell the opposite story – without significant change to the physical infrastructure, innovation in classroom teaching will be hampered if not eliminated (Oradini et al., 2019).

Other common issues include the resistance to change among academic colleagues, who may be

accustomed to traditional teaching methods and reluctant to adapt to new technologies and pedagogical strategies (Liu & Yodmongkol, 2023). Additionally, the successful transition to blended or flipped learning requires time and effort in redesigning courses, creating engaging online content and ensuring student participation and engagement outside the classroom (Baig, M. I., & Yadegaridehkordi 2023; Cheung et al., 2023). Moreover, concerns about digital equity, technology access, and the need for colleague training and support have hindered widespread adoption (Picciano et al., 2023). Consequently, many academic colleagues have found it challenging to embrace these blended teaching approaches comprehensively despite their potential affordances.

As the use of GenAI continues to grow in university settings, exploring the opportunities and challenges it presents for transforming education is imperative. As Alsharani (2023) pointed out, GenAI tools like ChatGPT have the potential to make blended learning systems more sustainable, efficient and accessible to learners. However, first, we must encourage teachers and students to recognise the potential value of GenAI, encouraging and helping them exploit them safely and ethically.

The research described and analysed in the following sections is focused on better understanding the overall and changing attitude of students and academic colleagues towards GenAI. The main goal was to study the changing use and attitudes towards GenAI. This will help understand how GenAI can enhance innovative teaching and learning practices, both in and out of the classroom, potentially leading to more effective blended, active learning.

## 2. Method

This methods section outlines the approach, participants, data collection methods, and statistical analyses to understand how the study was conducted and how the data was interpreted.

### *2.1 Data Collection*

Surveys were designed to be anonymous, ensuring confidentiality and encouraging honest responses. Respondents were asked to rate their familiarity with, attitudes towards, and usage of GenAI tools in their educational practices. The survey included closed-ended questions for quantitative analysis and open-ended questions to collect qualitative data on personal experiences, opinions and some demographics. Face-to-face focus groups were used to discuss the results obtained from the surveys to gain further nuanced views.

### *2.2 Ethical Considerations*

For the study, all participants were informed about the purpose of the research, the voluntary nature of their participation, and the anonymity of their responses in any reports or publications resulting from data collection.

### *2.3 Study Design and Participants*

This study employed a mixed-methods approach to investigate the perceptions and uses of GenAI across the University of Westminster. The research targeted academic colleagues and students, and surveys were conducted at two different time points (March 2023 and December 2023). The quantitative survey data was complemented by qualitative analysis of open-text questions posed within the surveys alongside

face-to-face discussions with colleagues and students.

The survey was distributed to approximately 1200 academic colleagues across the 12 schools at the university (Schools of: Applied Management; Architecture and Cities; Computer Science and Engineering; Finance and Accounting; Humanities; Life Sciences; Management and Marketing; Organisations, Economy and Society; Social Sciences; Arts; Media and Communication and Law).

In March 2023, the initial survey received responses from 240 academic colleagues, while the follow-up survey in December 2023 saw participation from 105 colleagues. The surveys were distributed to approximately 1200 academic colleagues. Another similar survey instrument was used with students at the same time points: March 2023 and December 2023. The March 2023 survey received 2040 responses, and the December 2023 survey received 1203 responses. The total student population at Westminster is approximately 19000 across all schools.

*2.4 Data Analysis*

Confidence intervals for proportions were calculated to assess the confidence level in the survey results. This helped estimate the survey responses' precision relative to the potential response population. The analysis included:

1. Calculation of Confidence Intervals: A 95% confidence interval was calculated for each group's response rate. This interval provided a range within which the proper proportion of the population's response is expected to fall.
2. Chi-Square Tests for Independence: Chi-square tests were performed to determine if there were statistically significant changes in attitudes between March 2023 and December 2023 among the total respondents.
3. Chi-square Goodness of Fit: This test was used to determine whether the distribution of responses from different schools or, for example, in the case of students, the level of study, might significantly impact the interpretation of the survey data.

In addition, sentiment analysis of responses to open-text questions was done using NVivo alongside a more manual human-based assessment of the overall pattern of comments collected. Focus groups with students and workshops with academic colleagues were held between the first (March 2023) and second (December 2023) survey points and after the second survey. This enabled the collection of further views and some sense checking of the trends observed from the surveys.

## 3. Results

*3.1 Statistical Analysis*

To assess the confidence level in the survey results, confidence intervals for proportions were calculated using a 95% confidence interval. This helped estimate the survey responses' precision relative to the potential response population.

The 95% confidence intervals for the response rates of each survey are summarised in Table 1 below. These intervals estimate the range within which the proper proportion of each population's response rate likely falls under the assumption of normal distribution of the underlying sample proportion.

Table 1. Confidence intervals for each survey conducted

| Group surveyed | Response rate | Confidence interval | Reliability Comments |
|---|---|---|---|
| March 2023, Academic Colleagues | 30% | 26.8% to 33.2% | This response rate and relatively narrow confidence interval suggest a moderately reliable dataset. The response rate is substantial enough to provide a good snapshot of the academic colleagues' views, although there is still room for non-response bias. |
| December 2023, Academic Colleagues | 13.1% | 10.8% to 5.5% | The lower response rate and slightly wider confidence interval indicate less reliability and a more significant potential for non-response bias. The data collected might not be as representative, possibly reflecting the views of a more engaged or available subset of the population. |
| March 2023, Students | 10.9% | 10.5% to 11.3% | The narrow confidence interval suggests high precision in measuring those who did respond. However, the representativeness could be questioned given the overall participation rate relative to the large student body. |
| December 2023, Students | 4.7% | 4.4% to 5.0% | The lower response rate and relatively narrow confidence interval indicate precise measurement but potentially poor representativeness. |

With the academic colleague survey, the chi-squared goodness of fit analysis indicated no significant difference between the expected distribution of responses across schools based on the total number of possible respondents from each school. For the student survey, there was similarly insufficient evidence to suggest that the distribution of responses from each school was significantly different from the expected distribution. However, Chi-squared tests did suggest that the distribution of responses from each study level was significantly different from the expected distribution. Level 7 had a higher response rate than expected, while level 5 had a lower response rate than expected.

*3.2 Familiarity with and Confidence in Using Generative AI*

Between March and December 2023, familiarity with GenAI and confidence in using it amongst academic colleagues increased (see Table 2).

Table 2. Academic colleagues' familiarity with and confidence in using GenAI at the University of Westminster

| Familiarity with GenAI | March 2023 | December 2023 |
|---|---|---|
| Very familiar | 21% | 29% |
| Somewhat familiar | 59% | 58% |
| Not familiar at all | 20% | 13% |

| **Confidence in using GenAI** | **March 2023** | **December 2023** |
|---|---|---|
| Extremely confident | 7% | 20% |
| Somewhat confident | 35% | 27% |
| Neutral | 21% | 28% |
| Somewhat not confident | 22% | 15% |
| Extremely not confident | 15% | 10% |

Concerning confidence in using GenAI, a chi-squared test of the data in Table 2 indicates that the change to greater confidence shown in using GenAI among academic colleagues was significant. Conversely, regarding familiarity with GenAI, there is not enough statistical evidence to conclude that the familiarity with GenAI among colleagues significantly changed between the two survey dates.

Corresponding data from the student survey on familiarity with and confidence in using GenAI is shown in Table 3 and 4. A chi-squared test for homogeneity for the data in Table 3 indicated a significant change in how students felt about their confidence with GenAI between the two survey dates. However, there appeared to be no significant change in how familiar they were with GenAI.

Table 3. Student familiarity with using GenAI at the University of Westminster

| Familiarity with GenAI | March 2023 | December 2023 |
|---|---|---|
| Very familiar | 24% | 26% |
| Somewhat familiar | 63% | 62% |
| Not familiar at all | 14% | 12% |

Table 4. Student confidence in using GenAI at the University of Westminster

| Confidence in using GenAI | March 2023 | December 2023 |
|---|---|---|
| Extremely confident | 10% | 14% |
| Somewhat confident | 31% | 35% |
| Neutral | 38% | 34% |
| Somewhat not confident | 14% | 11% |
| Extremely not confident | 8% | 6% |

Chi-squared checks for homogeneity indicates some variation between different subject areas, with students studying the arts or humanities tending to be less familiar with GenAI than other subjects. It was also observed that the level of familiarity with GenAI varied with the level of study. Both foundation and first-year undergraduates were more familiar than second or third-year undergraduates. Similarly, postgraduate students were more familiar with GenAI than undergraduates.

*3.3 Should students be taught about GenAI?*

There was general agreement that students should be taught about GenAI and how to use it effectively. A significant proportion (around one-third) of academic colleagues indicated that this should be done within the context of the subject students were studying (see Table 5).

Table 5. Should students be taught about generative AI in university?

| Answer | March 2023 | December 2023 |
|---|---|---|
| Yes | 65% | 67% |
| Yes, but only in the specific subject context | 30% | 33% |
| No | 5% | 0% |

A chi-squared test for homogeneity of the data in Table 5 suggested that whilst there might have been some shift in opinions, it is not enough to definitively say that the population's view had changed significantly over the periods surveyed.

Students were asked a slightly different question: Should the university teach students how to use Generative AI tools? Table 6 summarises the data from students.

Table 6. Should students be taught about generative AI in university?

| Answer | March 2023 | December 2023 |
|---|---|---|
| Yes | 46% | 52% |
| Yes, but only if relevant to my studies | 44% | 39% |
| No | 10% | 9% |

A chi-squared test for homogeneity of the data in Table 6 indicated a significant difference in the distribution of opinions between March 2023 and December 2023 with more students tending to answer ‘Yes’ to this question.

*3.4 Use of Generative AI in teaching or to support learning.*

In the survey, academic colleagues were prompted to indicate whether they used GenAI in their teaching. It can be seen from Fig 1 below that there was an increase in the proportion of respondents using GenAI regularly or occasionally. There is strong statistical evidence from a chi-squared test to conclude that the frequency with which colleagues used GenAI in their teaching or their attitudes towards using it had

significantly changed between March 2023 and December 2023.

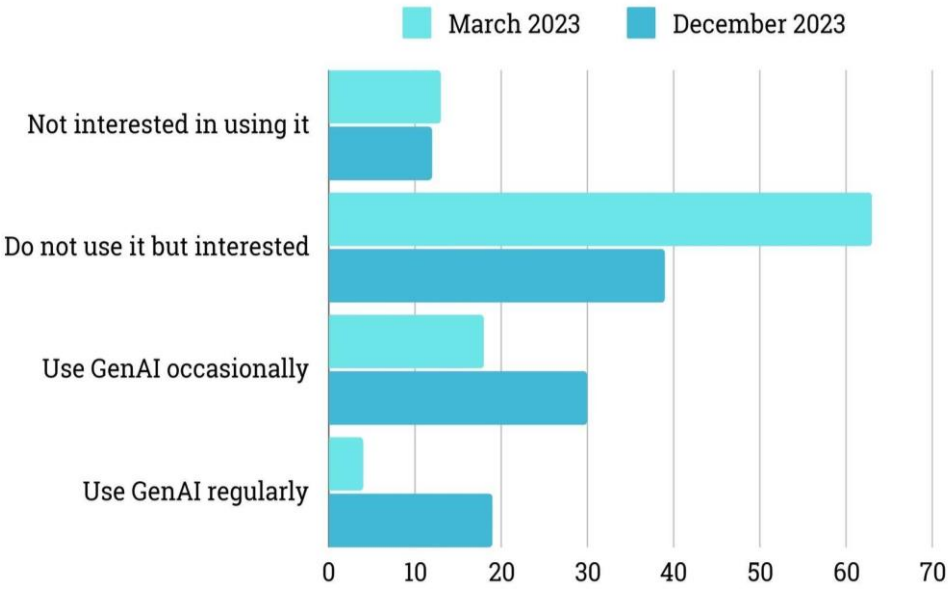


Figure 1. Have you already used generative AI tools in your teaching?

In their survey, students were asked: 'Have you ever used generative AI tools as part of your education/learning? An analysis of the data collected is shown below in Fig. 3.

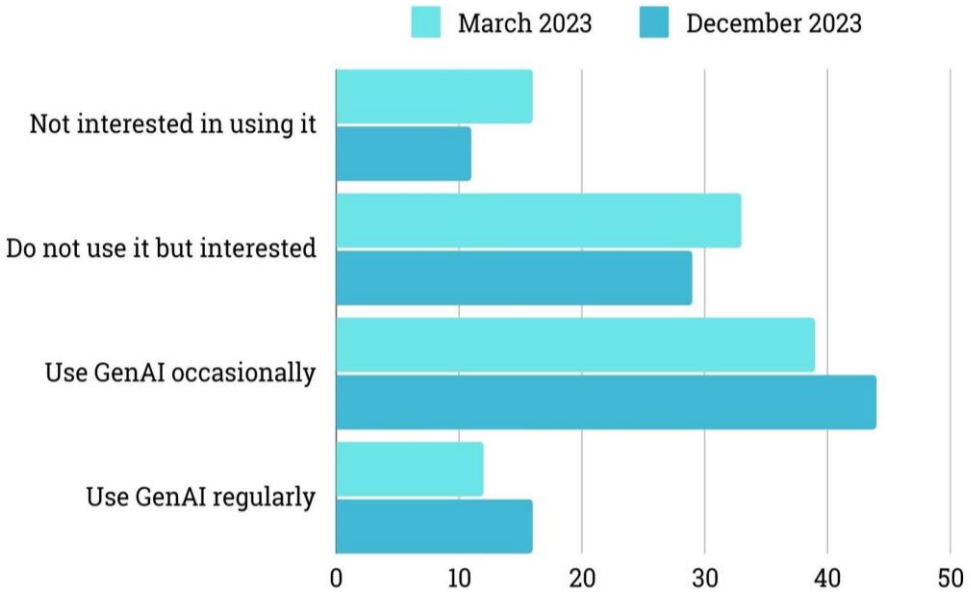


Figure 2. Have you ever used generative AI tools as part of your education/learning?

A chi-squared test for homogeneity of the data represented in Figure 3 indicated a significant difference in the distribution of responses between March 2023 and December 2023. More students are using GenAI, and there was a reduction in the proportion of those not interested in using it. There were

variations across subject areas, with greater proportions of students in arts, media, and communication, and the humanities more likely not to be interested in using GenAI.

The survey for academic colleagues asked, 'In which areas of education do you think GenAI could potentially be most useful?'. Respondents could select as many options as they wished from a pre-selected list. They could choose Personalised learning, Adaptive learning, Assessment and feedback, Feedback, Curriculum design, Language learning, I am unsure, and I do not think GenAI will be useful in education or 'Other'.

The percentage of each option chosen for the March 2023 and December 2023 surveys is graphically represented in Fig. 3. Personalised learning, adaptive learning, and assessment and feedback were the top choices in March 2023. In December 2023, the pattern was slightly different, with the use of GenAI in curriculum design now one of the top 3 choices (along with personalised learning and assessment and feedback). A chi-squared test for each option suggested significant differences between the two survey dates for the 'Curriculum design' and 'I am not sure' choices.

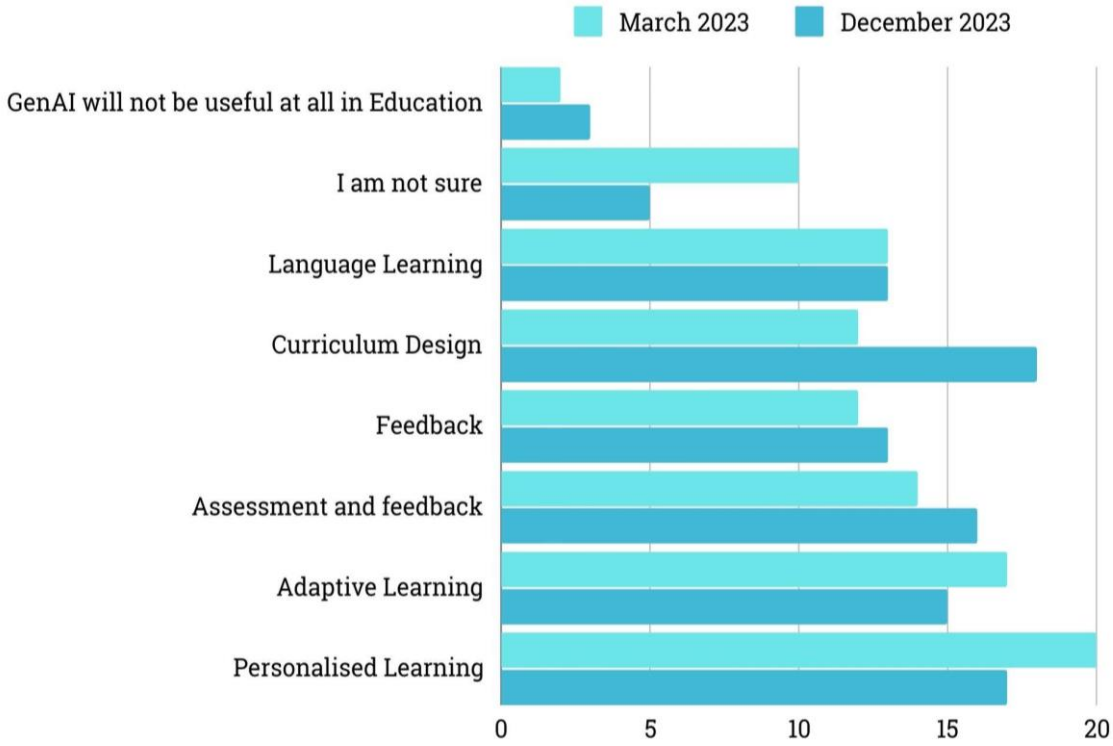


Figure 3. Which area of education could GenAI potentially be most useful?

In addition, colleagues were asked to rank a pre-determined list of possible uses for GenAI in order of which might be most important to them as teachers. The percentage of 'first choice' selections for each option provided to respondents is shown in Table 7 below.

Table 7. Ranking use cases of GenAI in teaching

| Application for GenAI | March 2023 | December 2023 |
|---|---|---|
| Provide multiple examples that illustrate concepts and ideas | 38% | 33% |
| Provide explanations of difficult topics from multiple perspectives | 18% | 21% |
| Generate formative tests/quizzes on specific subjects/topics. | 13% | 7% |
| Assess whole class contributions to a brainstorm by collating, summarising and drawing themes from the collective responses. | 10% | 5% |
| Generate a lesson plan. | 10% | 4% |
| Provide handouts or summaries of specific topics. | 7% | 4% |
| Suggest ideas for group activities aligned to specific topics and learning objectives and suggest appropriate discussion or debate topics. | 4% | 6% |

The data in Table 7 above shows some variation about certain options (e.g., GenAI use in lesson planning, which was selected as a top use by 10% in March 203 but only 4% in December 2023). However, the most often selected options at both times the survey was distributed were using GenAI to 'Provide multiple examples that illustrate concepts and ideas' and 'Provide explanations of difficult topics from multiple perspectives'.

The survey also allowed respondents to add in a free-text fashion other uses for GenAI in education that they felt were not adequately represented by the pre-determined list. Some additional specific use cases are shown below in Table 8.

Table 8. Additional use cases for GenAI in teaching cited by academic colleagues

| Use Case | Explanation |
|---|---|
| **Resource Discovery and Interpretation** | Generative AI could aid in identifying and interpreting various information sources, offering perspectives that complement or challenge traditional teaching materials. |
| **Language and Coding Learning** | Generative AI could be useful in learning languages, including programming languages, by providing immediate feedback and analysis. |
| **Debate and Critical Analysis** | Generative AI could stimulate constructive debates and aid |

| | |
|---|---|
| | in critical analysis by providing diverse information. |
| **Self-Directed Learning** | AI could be used to foster deeper self-directed learning among students. |
| **Research and Investigation** | AI could support research efforts by quickly generating overviews of common knowledge and assisting in grant and funding applications. |
| **Employability and Business Integration** | Respondents noted the importance of tracking business applications of AI and integrating this knowledge into the curriculum to improve students' employability. |
| **Interview Preparation and Appraisals** | AI could be used to prepare students for job interviews and performance appraisals. |
| **Content Creation in Creative Industries** | AI can be transformative in creating images, videos, 3D models, animations, and codes for apps, sites, and games. |

Sentiment analysis of the free text comments towards the range of uses for GenAI in education suggests an overall view of cautious optimism. Beyond the pre-determined list of potential uses they could select from (see Table 7), respondents saw other potential in areas such as student support services, language learning, self-directed study, and creative disciplines. They believe GenAI can enhance research, academic writing, and employability skills. However, they also express concerns about the ethics of GenAI use, the authenticity of student work, and the need for GenAI-resistant assessments. Many also note the challenge of integrating GenAI into the assessment process. Despite some reservations, the overarching sentiment suggests some recognition of the significant potential of GenAI, tempered by a call for careful implementation and consideration of ethical implications.

It was also clear that GenAI was being used and explored in various innovative ways across the academic colleague base. It sometimes accelerates academic tasks like lecture preparation, content generation, and ‘developing’ assessment feedback. Another potentially significant application mentioned is improving student engagement and understanding; this is done using GenAI to provide concise summaries of complex topics and facilitate support for better writing. Some colleagues have also leveraged GenAI to create interactive learning environments by having students’ critique GenAI-generated answers, seeking to promote and develop critical thinking. Some specific examples of use cases described by academic colleagues are summarised in Table 9 across four broad areas.

Table 9. Additional use cases for Generative AI in teaching cited by academic colleagues

| Categories of use in Teaching | Specific use cases/Examples |
|---|---|
| **Content Generation** | Generating seminar tasks; Creating lesson plans, essay questions and teaching content; Adding context to concepts and providing examples |
| **Assessment and Feedback** | Creating quizzes, student task templates and rubrics<br>Generating example answers and providing explanations<br>Developing marking schemes and feedback for students |
| **Student Engagement** | Starting point for discussions and in-class feedback<br>Designing vignettes and generating authentic tasks<br>Generating code for student evaluation |
| **Curriculum Design** | Generating ideas for assessment; Developing case studies<br>Brainstorming learning activities and generating images |

Students were asked on their survey: In what ways have you used, or do you think you might use GenAI tools like ChatGPT to help with your learning? They were permitted to select any from a pre-determined list of options. These are shown in Table 10 below, alongside the total number of selections made for each option in March and December 2023.

Table 10. The commonest ways that students have used GenAI to support learning

| Uses of GenAI by Students | Number of times selected | |
|---|---|---|
| | ***March 2023*** | ***December 2023*** |
| Getting explanations of concepts or how something works. | 1162 | 606 |
| Drafting ideas and planning or structuring written materials such as a report or essay | 980 | 704 |
| Helping to improve grammar and writing structure | 888 | 499 |
| Getting over writer's block. | 535 | 251 |
| Generating ideas for graphics, images and visuals. | 506 | 358 |
| Reviewing and critically analysing written materials to assess their validity. | 472 | 266 |
| Learning a second languages | 456 | 261 |
| Experimenting with different writing styles. | 449 | 260 |
| Debugging computer code. | 414 | 230 |
| Other | 184 | 55 |

Chi-squared tests conducted on the data suggest significant differences between March 2023 and December 2023 for drafting ideas (a 10% increase), generating graphics (a 5% increase), getting explanations (a 7% decrease), overcoming writer's block (a 6% decrease) and other (a 4.5% decrease). Amongst the 'Other' category, commonly cited uses included schedule planning, seeking emotional support, getting advice, simplifying complicated questions, language translation, curiosity, helping to visualise ideas, getting answers if I am on the move, and helping with summarising books and articles.

Analysis of variance tests showed that the options selected in response to the question varied across some Schools. Significantly more Computer Science and Engineering (CS&E) students selected the option of Debugging Computer Code, as might be expected. However, more CS&E students selected Reviewing and Critically Analysing Written Materials than expected. Conversely, the option 'Drafting Ideas and Planning or Structuring Written Materials' was selected less frequently than for other Schools. This may suggest that while they exploit GenAI for more technical tasks like debugging, they rely less on GenAI for planning or structuring written work or that they have fewer written tasks to perform. Similarly, 'Getting Over Writer's Block' was selected less frequently by CS&E students.

Students in the School of Law selected the option 'Drafting Ideas and Planning or Structuring Written Materials' more often than expected. In Law, 'Getting Over Writer's Block' and 'Helping to Improve Grammar and Writing Structure' were selected more often than expected. Across School of Life Sciences students, 'Experimenting with Different Writing Styles' was selected more often than expected, and the option 'Helping to Improve Grammar and Writing Structure' was also selected more often than expected. In the School of Social Sciences, 'Getting Over Writer's Block' was chosen significantly more often than 'Drafting Ideas and Planning or Structuring Written Materials'. Unlike students in Life Sciences 'Experimenting with Different Writing Styles' was chosen less frequently. Across the Schools of Law, Social Sciences and Life Sciences, "Debugging Computer Code" is notably less selected than by students from other schools.

*3.5 Concerns about using GenAI*

Both student and academic colleagues' surveys presented questions about concerns regarding GenAI. Respondents were asked to select from a predetermined list of common concerns: Bias and Discrimination, Privacy and data security, Dependence on technology, Quality of generated content, Ethical considerations and, for students, Lack of interaction with teachers.

Concerning academic colleagues, there were no significant differences in the selected options in the March and December 2023 surveys. Dependence on technology and Ethical consideration were the most frequently selected options (selected 26% – 28% of the time), followed by Bias and discrimination, and Privacy and security (selected 21%-22% and 18%-19% of the time, respectively). Additional free text comments reinforced the pre-selected options but also raised additional concerns. Sentiment analysis of the free-text comments suggested a cautious approach to using GenAI in learning and teaching. Evident was the strong concern about academic integrity, with fears that GenAI tools could facilitate plagiarism and undermine genuine learning. Respondents also expressed apprehension about the potential for

GenAI to undermine independent thinking and critical analysis. The accuracy of GenAI-generated information is a significant concern, as is the potential for implicit bias. Many respondents see the need for assessment redesign but worry about the increased workload for educators. Despite all of these concerns, there was a recognition by a majority, of the potential benefits of GenAI, provided its use is managed responsibly.

For students, their commonest concern across both survey points (March 2023 and December 2023) was Dependence on technology (selected 28%-29% of the time) followed by Quality of generated content and Privacy and security (selected 25%-27% and 20%-22% of the time respectively). Regarding the concern 'Lack of personal interaction with teachers', there was consistency across the two surveys, with that option selected 15%-16% of the time.

Looking across the schools, it is possible to see that five, the Schools of Art, Life Sciences, Finance and Accounting, Law and Applied Management, had patterns of responses to the question that varied significantly from the collective figures for all Schools. Each of these five Schools shows a unique pattern in its concerns about using GenAI in education. For instance, the School of Arts showed more indifference (i.e., "I have no concerns") than other schools. At the same time, both Arts and Life Sciences express more concern over "Privacy and data security" and "Quality of generated content." In contrast, Finance and Accounting students were less concerned about the "Quality of generated content" than the overall population.

*3.6 Addressing Equality and Access Issues with GenAI*

When first surveyed in March 2023, 19% of academic colleagues believed that using GenAI in higher education could help address issues associated with equity and access to university. This had risen to 27% in the December 2023 survey (see Table 11).

Table 11. Do you believe that generative AI tools can help address issues of access and equity in education?

| Answer | March 2023 | December 2023 |
|---|---|---|
| Yes, in many areas | 19% | 27% |
| Yes, in limited areas/ways | 56% | 51% |
| No | 25% | 22% |

A chi-squared test for homogeneity of the data in Table 11 indicated that the responses in the December 2023 survey differ significantly from those in the March 2023 survey.

*3.7 GenAI impact on the future of education*

Here, academic colleague respondents were asked whether they felt that GenAI would significantly impact the future of education. Most respondents believed it would have some impact without fundamentally changing education or that GenAI would completely revolutionise education (see Fig 4).

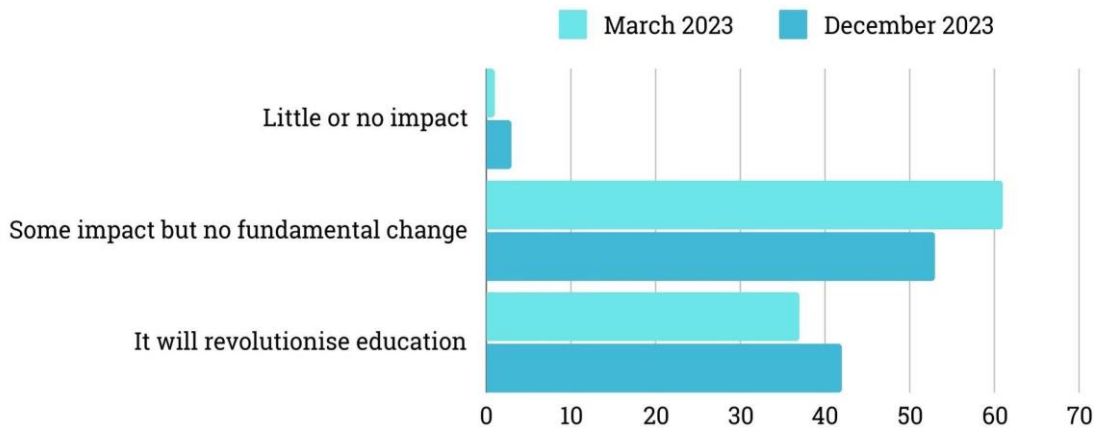


Figure 4. How do you think generative AI could change the future of education?

*3.8 What are students being told by their lecturers?*

One question on the student survey was: Have any of your lecturers spoken to you about ChatGPT or asked you to use it in your work? The proportion who responded Yes or No are shown in Table 12 below.

Table 12. Number of students indicating that their lecturers has spoken to them about Generative AI

| Have any lecturers spoken to you about ChatGPT or asked you to use it in your work? | March 2023 (n=2040) | December 2023 (n=1203) |
|---|---|---|
| Yes | 15% | 34% |
| No | 85% | 66% |

As seen from Table 12, there has been a significant increase in the proportion of students who indicated that their academic teachers had spoken to them between March 2023 and December 2023. Across all Schools, Computer Science and Engineering had the highest proportion of students who indicated their tutors had spoken to them.

Based on the open text responses provided by students who had been spoken to by their lecturers about GenAI, this was done in various contexts, such as its implications on future assignments, how it works and how it can help, its 'broad' possibilities in their subject area and capabilities and risks of using it. Some have told students to be wary of using it to write an entire work, with one indicating they had been told 'because the plagiarism detector will pick up that GenAI has written it' and that using GenAI might constitute academic misconduct. Some students were told explicitly not to use GenAI. There was some indication from focus groups that some lecturers did not want to speak about ChatGPT too much for fear that students would use it. However, some colleagues discussed legitimate uses of ChatGPT (such as using it to help make written work more concise). Some courses had a specific reason for discussing GenAI with their students. For example, in media courses, the use by freelancers and social media managers to write content for clients and generate concept images and initial ideas when producing final

images for portfolios was discussed, and, in computing, its use in coding was raised.

An analysis of the collective student comments reveals a distribution predominantly of neutral sentiments, followed by positive and negative sentiments. The distribution of comment type indicated that sentiment toward GenAI may vary by discipline, with some schools showing a more critical or cautious stance. In contrast, others are more positive or neutral. In summary, the data reflected diverse sentiments and possible themes regarding using GenAI in academic settings, with variations across different schools that might reflect each discipline's unique approaches or concerns towards using GenAI.

*3.9 Student views related to assessment*

Two questions were posed to students about assessment, but only in the survey conducted in December 2023. These had been added mainly due to the strong focus that there had been amongst academic colleagues on the issues surrounding the use of GenAI for especially, at this time, written assessments. Tables 13 and 14 summarise the student responses.

Table 13. Should students be allowed to use Generative AI for any assessments?

| Do you think professors should allow the use of generative AI for any assignments? | Percentage |
|---|---|
| Yes, for all assignments | 17% |
| Yes, but only for certain assignments | 46% |
| No | 16% |
| Unsure | 21% |

Table 14. Should students be allowed to use generative AI as one tool to assist with their assignments, provided that they make clear how they have used Generative AI and reference its use properly in their assignment.?

| Should students be allowed to use generative AI as one tool to assist with their assignments? | Percentage |
|---|---|
| Yes | 60% |
| No | 13% |
| Unsure | 27% |

Chi-squared goodness of fit tests revealed that students studying Architecture and Cities, Arts and Law were likelier to answer ‘No’ to the questions about using GenAI in assessments. There was also a significantly greater tendency for students at level 7 to outright reject the use of GenAI in assessment and a greater tendency for students in the 18-24 age range to respond ‘Yes’.

*3.10 Analysis of free-text answers to the question ‘Is there anything else you would like to tell us about*

*GenAI' and discussions at focus groups and workshops*

3.10.1 Academic Colleagues

The themes emerging from responses from academic colleagues further revealed a diverse spectrum of perspectives on integrating GenAI into teaching. The need for clear guidelines, training, and ongoing support is prevalent, emphasising understanding these tools' appropriate uses, potential issues, and ethical implications. Ethical, social, and equity concerns are prominent, ranging from exploitative practices and inherent biases in GenAI to access issues among less privileged students. Respondents expressed anxiety over academic integrity and the potential misuse of GenAI, calling for authentic assessments and robust policies to manage academic offences involving GenAI. These concerns coincide with varying levels of understanding and acceptance of GenAI, with some expressing scepticism and others advocating for more knowledge sharing and open debate. Some respondents suggested integrating GenAI into the curriculum, promoting ethical use, and teaching students to evaluate GenAI output critically. The rapid technological evolution and its impact on education are acknowledged, with educators wanting to keep pace with these changes.

3.10.2 Students

Students perceive ChatGPT and other generative AI tools as powerful resources that can significantly enhance their learning experience and improve their writing skills. For example, a strong theme emerging from the analysis of comments was that these tools can help students overcome writer's block by providing structures and ideas, particularly supporting those struggling with writing. It was also pointed out that GenAI can also aid in understanding complex topics and engagingly contextualising research papers.

However, some students express concerns about the potential drawbacks of GenAI, such as a lack of personalisation and passion in their work. There are fears that overreliance on these tools may lead to lazy writing and learning habits and a decline in critical thinking skills. While acknowledging the potential benefits of GenAI in education, students also highlighted the need for caution and selective use to prevent misuse and overreliance on the output. They advocated for a balanced approach that encourages independent thinking while harnessing the advantages of these tools. To mitigate the risks, students emphasise teaching how to use GenAI tools properly and responsibly.

Students also recognised the value of GenAI skills beyond academia, particularly in the tech sector. They view proficiency in using these tools as desirable for their CVs. They believe integrating GenAI into the curriculum would better prepare them for the future workplace. To ensure effective and ethical use, students desire guidance and instruction from the university on leveraging these tools appropriately, including proper referencing and avoiding plagiarism.

In conclusion, the student survey reveals a generally positive perception of GenAI in education, with students recognising its potential to enhance learning and writing skills. However, they also emphasise the importance of responsible usage, proper instruction, and ongoing discussions to ensure these tools are used effectively and ethically.

## 4. Discussion

This study explored the attitudes and usage of GenAI among academic colleagues and students at the University of Westminster. For both the academic colleague and student surveys, the chi-squared goodness of fit test indicated no significant difference between the expected and observed distribution of responses across schools. This suggests that the sample is representative of the overall respective populations and treating them as a single group for analysis is reasonable. However, for the student survey the chi-squared goodness of fit test revealed significant differences in the distribution of responses across levels of study compared to the expected distribution. This suggests that the student sample may not fully represent the student population. Treating them as a single group in some respects could potentially obscure important variations in attitudes and experiences related to GenAI. Despite this limitation, compelling reasons exist to analyse the student responses as a single group. The overall trends and themes from the collective student responses provide valuable insights into the general student perspective on GenAI in education. Also, the relatively large sample size of the student surveys helps to mitigate some of the potential biases introduced by the non-representative distribution across levels of study. To strike a balance, the overall findings from the student survey are presented as representative of the general student perspective whilst acknowledging the limitation posed by the demographic 'level of study'. Where relevant, the discussion below considers observed variations across schools to provide a more nuanced understanding of the student experience with GenAI.

Overall, the findings indicate a growing familiarity and confidence in using GenAI tools among academic colleagues, with a notable increase in confidence from March 2023 to December 2023. Such a change could likely have arisen due to the general growing discussion of GenAI across the sector. However, the university put in place a range of upskilling opportunities for students and colleagues between the March and December survey dates. This may have had some impact though no direct data supports this correlation. Students' confidence in using GenAI also increased, but their familiarity did not significantly change. Postgraduate and first-year undergraduates were more familiar with GenAI than second and third-year undergraduates. It is possible this difference can be explained by, on the one hand, the likelihood that postgraduates may have experienced GenAI in employment and that new undergraduates may have more awareness of the tools from their experiences at school.

The increase in confidence among academic colleagues suggests a positive shift in their perception of GenAI's utility in educational settings. This aligns with previous studies that highlight the potential of GenAI to enhance teaching and learning experiences (Gimpel et al., 2023; Lee et al., 2023). However, students' relatively stable familiarity levels may indicate a need for more targeted educational initiatives to increase their exposure to and understanding of these tools. This is particularly important as familiarity with technology is a precursor to effective and confident usage (Horowitz et al., 2023; Chan & Hu 2023).

A significant proportion of academic colleagues believe that GenAI will have some impact on education, though not fundamentally change it. This cautious optimism reflects the broader academic discourse on the potential and limitations of GenAI in education (Michel-Villarreal et al., 2023; Yeralan and Lee,

2023). Despite some scepticism, increasing GenAI usage among academic colleagues suggests these tools are gradually being integrated into teaching practices. However, the persistent 10% of colleagues not interested in trying GenAI indicates that there are still barriers to full adoption, possibly due to concerns about academic integrity and the reliability of AI-generated content (Zohny et al., 2023).

Among students, there is a notable increase in the use of GenAI for drafting ideas and generating graphics, while the use for getting explanations and overcoming writer's block has decreased. This shift may reflect a growing sophistication in how students leverage GenAI, moving from basic uses to more complex applications. The variations in usage across different schools suggest that the specific needs and contexts of different disciplines influence the integration of GenAI. For instance, arts, media, communications, and humanities students are less likely to use GenAI, possibly due to concerns about the impact on creativity and originality.

Variations were observed across schools regarding specific uses of GenAI across disciplines. For example, more Computer Science and Engineering students selected ‘Reviewing and Critically Analysing Written Materials’ than would statistically be expected. It can be speculated that this could indicate a higher engagement in using AI for critical analysis and review tasks. Students in the School of Law selected the option ‘Drafting Ideas and Planning or Structuring Written Materials’ more, perhaps suggesting a greater reliance or value placed on GenAI tools for planning and structuring written work. In the School of Social Sciences, ‘Getting Over Writer's Block’ was chosen significantly more often, perhaps indicating that social sciences students may particularly value GenAI for creative or thought stimulation. Such variations in knowledge, experience and confidence in using GenAI tools have been reported before (see, for example, Kelly et al., 2023). Similarly, a UK-wide study by the Higher Education Policy Institute in 2024 concluded that students in STEM subjects were likelier to use GenAI to explain concepts and generate research ideas than humanities and social sciences students. More research needs to be undertaken with students and colleagues at Westminster to explore further the reasons for the subject differences that data collected in our study has shown.

The growing interest in using GenAI amongst students and colleagues could be used going forward to define strategies for the use of GenAI to support and enhance blended learning approaches. Tools like ChatGPT and Microsoft Copilot can provide personalised learning experiences, generate interactive content, and offer rapid feedback, thereby facilitating more dynamic and engaging learning environments (Park and Doo, 2024). The ability of GenAI to support personalised and adaptive learning, as well as curriculum design, underscores its potential to transform traditional teaching methods and promote active learning (Akçayır & Akçayır, 2018).

Effective classroom design is crucial for the success of active, blended learning environments. As noted in the introduction, the physical layout of classrooms can significantly impact the ability to facilitate active learning and collaborative activities (Saunders et al., 2017). Integrating GenAI into blended learning requires classrooms that support flexible and interactive learning experiences. Studies have shown that well-designed learning spaces that accommodate individual and group work can enhance

student engagement and learning outcomes (Baepler et al., 2014; Hyun et al., 2017). Therefore, universities should consider redesigning classroom spaces to support the dynamic and interactive nature of blended learning, which can be further enhanced using GenAI tools.

Despite the enthusiasm for GenAI, concerns about academic integrity, dependence on technology, and ethical considerations remain prevalent among academic colleagues and students. Addressing these concerns is crucial for successfully integrating GenAI into educational practices, including blended learning. Strategies such as clear guidelines on the ethical use of GenAI, training for teachers and students, and developing GenAI-resistant assessments can help mitigate these concerns and promote responsible usage (Graham et al., 2023).

Future research should focus on continuing longitudinal studies to further track changes in attitudes and usage of GenAI over time. Additionally, exploring the specific barriers to adoption among the 10% of academic colleagues not interested in using GenAI could provide insights into how to address their concerns. Research should also investigate the impact of GenAI on student learning outcomes and engagement, particularly in disciplines that are currently less inclined to use these tools.

In conclusion, the study demonstrates a growing familiarity and confidence in using GenAI among academic colleagues and students at the University of Westminster. While there are concerns about academic integrity and the ethical use of AI, the potential benefits of GenAI in enhancing teaching and learning are significant. By addressing the concerns and promoting responsible usage, GenAI can play a crucial role in invigorating active learning through blended learning approaches and engaging students in innovative ways. The findings underscore the need for ongoing research and dialogue to fully realise the potential of GenAI in education.

## 5. Conclusion

In conclusion, this study provides valuable insights into the evolving attitudes and usage of GenAI by academic colleagues and students at the University of Westminster. The findings demonstrate a growing familiarity and confidence in using GenAI tools, particularly among the former. While the potential benefits of GenAI in enhancing teaching and learning experiences are widely recognised, concerns related to academic integrity, dependence on technology, and ethical considerations remain prevalent.

To successfully integrate GenAI into educational practices and harness its potential to invigorate active learning through blended approaches, it is crucial to address these concerns head-on. Universities must develop clear guidelines on the ethical use of GenAI, provide comprehensive training for faculty and students, and design GenAI-resistant authentic assessments. Moreover, the physical learning environment plays a significant role in facilitating active, blended learning; therefore, classroom design should continue to be adapted to support the dynamic and interactive nature of GenAI-enhanced education.

As the use of GenAI continues to grow in university settings, it is imperative to foster ongoing research and dialogue to understand its impact and potential fully. By proactively addressing concerns, promoting responsible usage, and adapting educational practices and spaces, universities can effectively leverage

the power of GenAI to transform the educational landscape and engage students in innovative ways. The future of higher education lies in engaging with the opportunities presented by GenAI while navigating its challenges, ultimately paving the way for a more dynamic, personalised, and engaging learning experience. The growth in GenAI use seen in this study is an encouraging sign of some shift in attitude towards the more positive affordance of GenaI. A critical aspect of further engagement with these tools will be the continued provision of support and training for students and colleagues on how GenAI may facilitate active student-centred learning.

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