How do Students Use Generative AI for Learning?

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Background

Generative Artificial Intelligence (GenAI) tools such as ChatGPT, Google Gemini, and Microsoft Copilot are increasingly integrated into students' learning practices across disciplines. But what is the impact of GenAI on students' learning process?

The deconstruction of this broad question requires a granular approach for the interpretation of the 'learning process'. The learning process is knowledge-focused and 'active', foregrounding the development of fundamental and advanced skills, including processing; reasoning, notably interpretation and evaluation of information; application of knowledge to scenarios/tasks; synthesis via research; in-depth reflection; writing skills, involving clarity/coherence; creativity; data analysis and pattern identification for quantitative courses.

Our research aims to understand how various GenAI uses, for e.g. translating; summarising; drafting/structuring content; testing code and task-based explanations; conversational discussion, affect distinct cognitive skills in the learning process, which includes, but is not limited to assessment preparation.

> "In the Autumn Term I was reliant on ChatGPT for my formatives. For the Winter Term, I didn't use ChatGPT, and my scores were higher. This made me realize I could do better by myself. But I still think it comes down to how effectively you use AI."

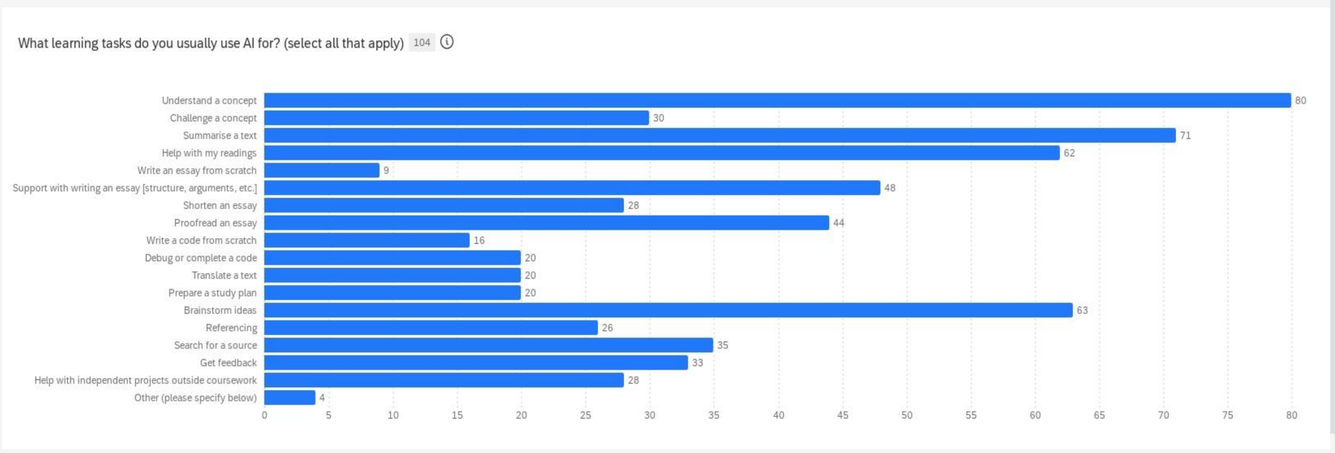
Methodology

Our first method of data collection was an online survey conducted via Qualtrics from March until May 2025. Through the survey we gathered information about (I) whether students use GenAI tools to supplement through academic learning processes and whether they find it to be useful, (II) how they use GenAI to support their studies, and (III) their perceptions about the use, trustworthiness and efficiency of GenAI tools. Questions covered both a multiple-choice answer format and a free-type format. We received 164 responses from LSE undergraduate and postgraduate students out of which 117 were valid and used for further analysis.

From this survey, we called on interested participants to take part in two longitudinal focus groups. The focus groups were conducted in the Winter and Spring Terms to understand the changes in perceptions of GenAI use. The focus group had 9 postgraduate (8 female, 1 male) and 1 undergraduate (1 male) participant.

Findings

The survey demonstrates that Generative Artificial Intelligence (GenAI) tools such as ChatGPT, Google Gemini, and Microsoft Copilot are deeply integrated into students' learning practices across disciplines – 88.9% of the respondents have used them in the academic context (nearly 53% use them always or often, whereas nearly 47% use them sometimes or rarely). ChatGPT emerged as the most popular tool (93.2%). Students use GenAI to enhance their productivity, deepen understanding, and support academic writing. The top three tasks delegated to GenAI are the following: 1) understanding a concept (76.9%); 2) summarizing readings (68.3%); and 3) brainstorming ideas (60.6%). Per Bloom's taxonomy, this shows that lower order cognitive skills (at the level of understanding and comprehension) tend to be delegated more frequently by students, yet GenAI is increasingly used for higher order cognitive skills as well, such as brainstorming, challenging a concept (28.8%) or support with writing and argumentation (46.2%). For non-native English speakers, GenAI also serves as a linguistic aid, helping with translation and articulating ideas (19.2%).

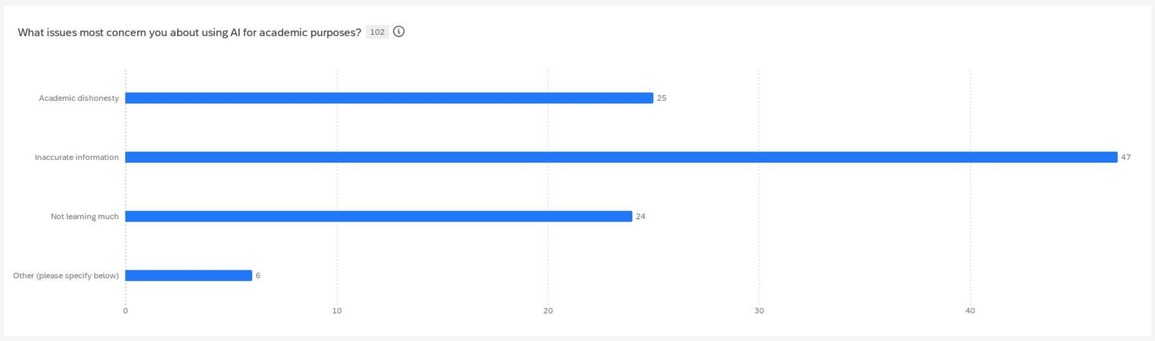


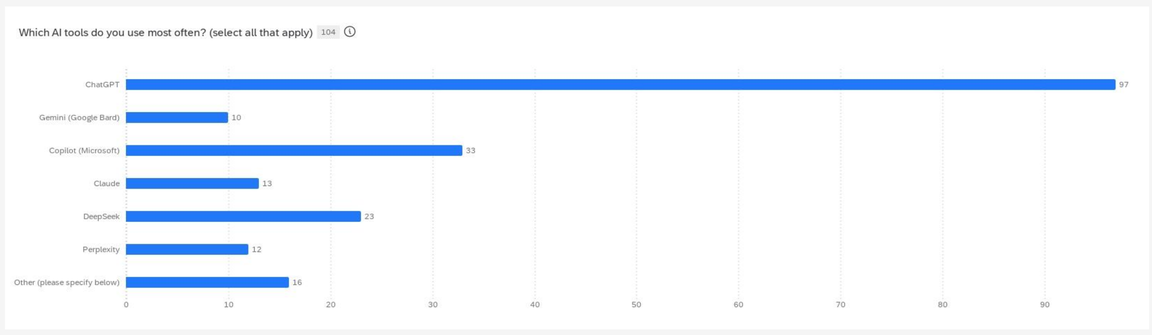
However, the adoption of GenAI is shaped by several factors, including digital literacy, institutional policies, field of study, and personal attitudes toward academic integrity. While some students see GenAI as an extension of their learning toolkit, others worry about over-reliance or ethical implications.

Findings (continued)

In terms of effectiveness and impact on the learning experience, the respondents evaluate GenAI positively: 84,6% of the respondents find GenAI very or moderately effective for their tasks, while 72,1% strongly or somewhat agree that GenAI has improved their learning experience at the LSE.

Students expressed varying confidence in the output produced by GenAI tools based on the type of task they were using it for. For instance, coding outputs were seen with almost complete confidence whereas with research-based outputs, students noted the tools often produced non-existent citations, cases or academic articles. Overall, quantitative outputs related to mathematical problems and coding, where it is possible to verify answers, are more trusted than qualitative, open-ended outputs. However, with both elements students did note that GenAI tools produce different answers when the same question is asked again, thereby raising doubts about its trustworthiness.





Focus Group Analysis

A more nuanced assessment emerges here. The vast majority of the participants use GenAI for academic purposes. Summarising, explaining concepts, exploring counterarguments, debugging code, and proofreading are the most popular tasks where GenAI works at its best, ie mostly for smaller tasks or lower order cognitive tasks. However, this positive attitude is not unconditional: several participants use GenAI with alertness and caution, fearing that a blind reliance on GenAI will ultimately hinder the learning process. Therefore, verification and critical conversation with GenAI emerge as key factors. During exam preparation and summative assessments, reliance on GenAI is more cautious and constrained, mostly focused on specific queries to better understand a concept, due to possible negative effects on critical thinking.

When given an option of choosing two similar courses with AI ban and allowance, participants opted for one which allows AI even if they would not necessarily use it in the course. Participants believe removing the stigma on AI usage particularly from the university side is essential to address the fear of getting blamed for academic misconduct. On a similar theme, discussing LSE's recent collaboration with Anthropic and its subscription to Claude, students noted that this is a way for the University of integrate AI into the academic sphere while simultaneously expressing scepticism about their usage of Claude, due to the University's potential ability to monitor usage.

Key conclusions

- Students feel that GenAI tools are the new Google Search. It is efficient, organised and quick.
- While being certain that GenAI tools are here to stay, students do feel increased reliance on AI leads to them spending lesser time on sharpening their cognitive skills such critical thinking, writing, structuring. However, with large curricula and with exams commencing, students expressed a sense of inevitably about relying on AI.
- For the exams, students used GenAI primarily for summarising and preparing notes. Podcasts produced through NotebookLM are seen to be especially useful.
- Students are deeply concerned about academic integrity and GenAI use. They are also strongly against professors using GenAI tools to supplement their classroom work.

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