How is GenAI used by Dyslexic, Neurodivergent and Disabled students in Higher Education?

Fletcher, R., Chen, E., He, Y. and Vinton, G., 2024. How is GenAI used by Dyslexic, Neurodivergent and Disabled students in Higher Education?, A TILT Student-Staff Co-Creation project, Nottingham Trent University

Executive Summary

Awareness and use of GenAI

- 31% of students had 'Never' used GenAI for study related purposes, while 45% stated they used GenAI 'A few times a month' or more frequently, which are both broadly similar to the levels reported by another recent UK student survey (HEPI Policy Note 51).
- Awareness of ChatGPT and MS Copilot were high, however MyAI (Snapchat) was the second-most familiar GenAI technology among respondents.
- 19% of students had paid for a "premium" version of a GenAI technology (for any duration of time).

Training and support

- Compared to their peers, 54% of respondents felt they were confident users of computer technology, while only 26% felt they were confident users of GenAI.
- The existing provision of generic and specialist software (through Disabled Students Allowances and institutions more broadly) may provide various useful lessons regarding the initial take-up and sustained usage of assistive technologies.

Use for study related tasks

- Our respondents may be slightly more likely to use GenAI for certain study tasks than other students (Explaining concepts, suggesting ideas, summarizing articles - compared to HEPI Policy Note 51). However, the two surveys more closely converge on their views regarding the direct use of GenAI in assessments: which all students broadly report using less personally and being less accepting of.
- The potential for GenAI to act as 'virtual tutor' is an area of growing interest, however only 9% of our respondents claim to have used GenAI in this way. There is clearly a considerable degree of interpretation as to what is defined as encompassing a 'virtual tutor' function.
- While some students report being willing to experiment with virtual advice, less than 30% are currently likely to use GenAI for non-study related advice (social, relationship, mental health).
- 46% of respondents felt that GenAI tools were well designed to accommodate their specific needs, however a similar 43% were neutral on the matter.

University policy

- 36% feel that their institution has a clear policy for the use of GenAI in assessed work while 28% are satisfied with the level of support they have received regarding GenAI.
- Some students feel more worried about being accused of plagiarism since the emergence of GenAI (50%) while many feel 'about the same' (48%). Most students are unsure if any GenAI detection technology can work as claimed (59%).

Use in teaching and assessment

- Students feel that: giving personal advice, delivering teaching and marking summative assessments would be the least appropriate potential uses of GenAI by the university.
- Courses may try to 'AI-proof' themselves in various ways. Given the range, it is hard to generalize, but there are both hopes and fears regarding future accessibility.

Future aspirations and concerns

- Most students (91%) felt that "keeping up with current technologies" was somewhat or very important to their course and career.
- Most were unsure about the impact of GenAI on their current career aspirations, although this view got slightly more negative in the longer term (>5 years time).
- Students have a clear level of concern around the wider effects and abuses of GenAI technology; from misinformation, scams, impact on artists and copyright, uses in government, surveillance, harassment and more. Social and ethical concerns will likely continue to require ongoing debate and discussion, particularly from courses that seek to make greater use of GenAI.

About the sample

- 54 survey responses were collected between March and May 2024.
- Specific learning difficulties (SpLDs) were the most commonly reported disability (30%) followed by Autistic spectrum conditions (22%), ADHD (19%) and Mental health conditions (19%).
- 7% of respondents were international students and 17% spoke English as a second or additional language. 73% were undergraduates.

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Introduction

Research and media discussion surrounding student awareness and use of Generative AI has proliferated since the launch of ChatGPT to the public in late 2022. A key motivation for this project was that despite a frenzy of surveys and polls on the topic, it seemed that the voices of Disabled students were largely absent.

Twenty-eight recent surveys and polls were briefly reviewed (Appendix A), with only three including even a cursory mention of disability. While the views of non-disabled and neurotypical student populations towards GenAI are becoming comparatively well-established, it was felt to be valuable to further investigate the views of Dyslexic, Neurodivergent and Disabled students specifically.

- Are they any more or less aware of GenAI?
- Do they use GenAI more or less frequently?
- Do they use GenAI in different ways?
- Is GenAI seen as any more of a benefit or risk by these students?

Technology of various kinds is often proposed as a step towards inclusive teaching and learning, but real-world usage across heterogeneous student populations and diverse academic disciplines, can quickly diverge from high-level policy expectations. Although many GenAI platforms increasingly offer multi-modal inputs/outputs, the text generation and manipulation features have provoked widespread alarm (and periodic optimism), when considered in a higher education context. There are incredibly broad applications with varying levels of acceptability across academic disciplines.

There are ongoing concerns with both the inherent biases and hallucinations of large-language models (LLMs) that may be a persistent feature and challenging to mitigate. Furthermore, the global regulatory and legal implications are far from resolved, presenting a potential moral hazard and considerable public debate over hard-fought concepts of authorship, copyright, privacy and more besides. The situation will no doubt keep evolving so we do not imagine this modest investigation represents the final word on any of the topics it addresses.

The project team proposed a small-scale survey with incentives for student participation funded by the NTU TILT Student-Staff Co-Creation Fund: “The Student-Staff Co-Creation Fund is intended to provide students (in partnership with a member of staff) with a small amount of funding for projects focusing on learning and teaching.” Having direct student involvement in the project's design and delivery was key, and the students responding to the survey have also been essential to its final outcomes and recommendations.

The project team

Richard Fletcher – Dyslexia Specialist, Disability & Inclusion Services

Technological solutions are not unfamiliar to people working in Disability support and of course, it is a genuine privilege to work in a field where the impossible suddenly seems possible. Behind these occasionally headline grabbing stories, however, is the hard work of disabled people and professionals. The unglamorous effort of designing, promoting, training and adapting technology to the unique needs of individuals while sensitively negotiating between 'useful support' and 'harmful reliance' is complex. We often work with both; students who are reluctant to use technology, and those who are overly optimistic about its capabilities, each potentially to their own detriment.

GenAI throws up a whole new range of these challenging discussions to have and it is essential that the voices of Disabled students are included. Without due care, support of any kind can often be put forward as a 'quick fix' for 'difficult' students. It is heartening to see various projects across the sector take the opportunity to question some long-standing assumptions about teaching, learning and assessment; while maintaining academic integrity. Regardless of GenAI, it seems that developing fundamental study skills, academic literacies, self-advocacy, self-regulation and overall digital confidence remain essential for students. Similarly, for courses, there are many basics of accessibility and inclusive practice that can continue to be incrementally improved and these 'implementation gaps' are; arguably, not often due to a lack of advanced technology.

Elaine Chen – Senior Lecturer, Nottingham Business School

My teaching philosophy centres on applying inclusive practice, and creating an engaging learning environment to ensure students feel valued and empowered to achieve their full potential. As a lecturer in the HEI for more than 10 years, I have become increasingly aware of the challenges faced by students with learning disabilities in the traditional educational settings. I believe that technology can play a crucial role in creating inclusive learning environments, and Gen AI offers a promising avenue for developing tools that can adapt to the unique needs of each student. Motivated by this belief, this co-creation project is the first step towards developing a Generative AI tool to support students with learning disabilities in order to make learning more accessible and personalised. My goal is to leverage my expertise in artificial intelligence and pedagogy to develop innovative solutions that improve learning outcomes for students with learning disabilities, fostering a more inclusive educational environment in higher education.

Yun He – Senior Research Fellow, Nottingham Business School

As a researcher primarily in the development of AI tools for decision support and analysis of complex industrial systems, I am always fascinated by the power of technology for improving the efficiency of either the systems themselves or the design and development processes of the systems. Meanwhile, one aspect that is often neglected by technology developers is the human being that is involved in the system. Because humans are so complicated and human needs are so variable, human constraints and individual's special needs are often put in the last place so that we can deal with 'simpler' things first and have an initial system running to start with. In the age of GenAI, with the potential of the appearance of the so-called "artificial general intelligence" (AGI), there is an urgent need for everybody to ponder what is the relationship between human and AI, what human's role would be in an intelligent autonomous system and, how to develop and use AI technologies ethically that best serve a variety of human needs. This co-creation project is a first step of a long journey to try to look into these questions.

George Vinton – Business Management and Marketing student (2nd year)

I, like many others, am diagnosed with Dyslexia and Attention deficit disorder. When GenAI first started to gain popularity, I began experimenting with ChatGPT. I quickly realised that this could help massively with analysing and lifting parts of the text that I could use towards my coursework. Initially, I was very hesitant to use GenAI as I was worried about plagiarism, but after consulting different tutors and academics, my confidence grew. I believe GenAI has a vital importance towards helping neurodiverse students excel in our studies and provide a tool that can offer 24/7 support. When Richard suggested a collaborative project on the links between uses of AI and neurodiverse students, I was keen to clear the uncertainty and further investigate the impact on neurodiverse students.

Whilst acknowledging that GenAI should not be a requirement, I do believe that the lack of clarity and teaching from universities could have a part in low awareness and confidence overall. Many students are missing out on a potentially important and useful tool. Even when GenAI is used, more advanced techniques such as prompt engineering could potentially be expanded on. I believe that my positive experience of using AI to help mitigate my Dyslexia and ADD is somewhat the same as many others, but there is still more that universities can do towards educating students on this topic and I believe it will be beneficial for everyone involved.

NTU Context

Nottingham Trent University (NTU) is the sixth largest university in the country with upwards of 35,000 students, spread across multiple campuses (City, Clifton, Brackenhurst, Mansfield, Confetti and Confetti London). NTU has won awards for Student Support and in June 2022, the Department for Education (DfE) announced the appointment of Nottingham Trent University Vice Chancellor, Professor Edward Peck as the first Higher Education Student Support Champion (HESSC).

In terms of Disability & Inclusion, the latest figures for 2023/24 show that nearly 9,500 enrolled students declared a disability. In common with many universities, overall demand is increasing, with overall engagement rising 33% since 2021/22. 71% of students declaring a disability have engaged with the service. As well as advice, this often includes setting up a formal Statement of Access and providing additional one-to-one support 'in-house' through Disabled Students Allowances or DSAs.

Positionality statement

We acknowledge that Generative AI is an emerging and frequently problematic technology, with well documented concerns around entrenching social inequalities, copyright infringement, environmental impacts and the invisible labour of content moderators frequently based in the global south. We primarily aim to examine the potential and limitations of this educational technology, as experienced by a marginalized group. However, we hope to also contribute to a wider critical discussion of the technology, social structures and organizations involved in its rapid proliferation.

AI Disclosure statement

No Generative AI was used in the production of this report, beyond common spellchecking and grammar checking features.

Key terms used and other sources of data:

The following definition of Generative AI (GenAI) was given in the student survey:
“We will use "GenAI" throughout to refer to all kinds of Generative AI technologies. For example, ChatGPT is one type of GenAI, but GenAI includes more than just ChatGPT.”

No specific definition of Dyslexia, Neurodivergence or Disability was provided. Dyslexia can be considered both a type of neurodivergence and a disability, however as one of the most commonly reported, it felt relevant to name specifically.

Two other key data sources are referred to in this report:

Tyton (2023):
Tyton Partners “GenAI in Higher Education: Fall 2023 Update, Time For Class Study”
- Surveyed 1600 US postsecondary students
- Faculty/staff were also surveyed but these results are not directly relevant to our study.
- This study was supported by Turnitin.

https://tytonpartners.com/app/uploads/2023/10/GenAI-IN-HIGHER-EDUCATION-FALL-2023-UPDATE-TIME-FOR-CLASS-STUDY.pdf

HEPI (2024):
Higher Education Policy Institute Policy Note 51 ‘Provide or punish? Students’ views on generative AI in higher education’
- Surveyed 1250 UK students through UCAS.
- This study was supported by Kortext.

https://www.hepi.ac.uk/wp-content/uploads/2024/01/HEPI-Policy-Note-51.pdf

Finally, readers who are unfamiliar with Disability support in the UK may not be aware of the role of the Disabled Students Allowances (DSA): https://www.gov.uk/disabled-students-allowance-dsa

Methodology

In total, 54 online survey responses were collected from NTU students. Data collection took place March-May 2024. The sections of the report that follow broadly follow the survey's overall design. The survey questions and Participant Information sheet are available on request.

Design of the survey:

The student support and lead collaborated on ideas for the survey over a few weeks leading up to the project submission in early January 2024. The team as a whole then agreed on final revisions to the survey.

There were 53 questions in 8 sections. A selection of questions from other surveys (Tyton, 2023; HEPI, 2024) were included to enable some broad comparisons to other datasets.

Microsoft Forms was used as an online survey platform. Overall, the platform chosen was suitable, although it was not possible to accept partial responses, or track the numbers who opened vs completed the survey.

Key dates:

Project application submitted	January 5th 2024
Project application successful	February 23rd 2024
Ethical approval received	March 5th 2024
Pilot stage survey opened	March 7th 2024
Main stage survey opened	April 23rd 2024
Main stage survey closed	May 24th 2024

Advertising and recruitment:

The survey was initially designed to be advertised via word-of-mouth among practitioners and while this was relatively successful for the pilot stage; it was a slow process. To enable a broader reach, while maintaining some control over the desired sample, a short screening form was set up. This allowed respondents to be verified before inviting them to the main survey. Posters with QR codes were posted near student support locations in the City, Clifton and Brackenhurst Campus. The poster was also shared via a Student Support Instagram page and via the internal Viva Engage platform.

Pilot stage participants were offered a £10 incentive compared to the £5 incentive of the main survey. The incentive was provided as credit to Smartcards for use in university cafes and libraries. The pilot survey also included six further questions related to the overall

design and operation of the survey. Other than verifying that the approach worked, no significant changes were subsequently made to the main survey.

Verification:

Via a students ID number, it was possible to cross-reference student responses with records held by the Disability & Inclusion team. All participants, bar one, had a prior record of engagement with the Disability & Inclusion team. Respondents needed an NTU email address to access the survey.

Although a detailed audit was not undertaken, the conditions stated by respondents closely matched their formally declared disabilities. Additional information was provided with the participant information pack to encourage participants to access further Disability or Wellbeing advice through the university if required.

All participants selected appropriate responses to the informed consent questions and no participants later retracted their consent within the two-week period advertised. One attention check question was used, and all participants successfully answered this question.

Analysis of data:

The two stages of data collection were combined into one dataset and identifying data (student numbers) were removed. This was analysed in MS Excel using descriptive statistics. A basic thematic coding of open-ended comments was carried out by one member of the team, although all team members had access to the raw data for cross validation. Some survey respondent comments have been edited for clarity, when quoted directly in the text, however care has been taken to preserve the original intent.

Student background

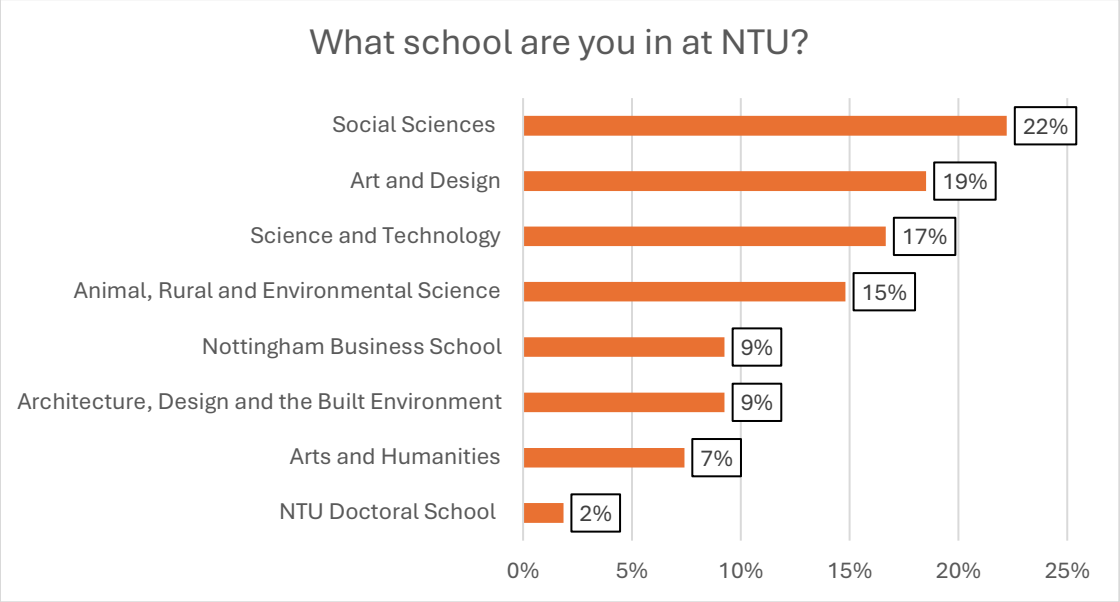


Figure 1 - Responses by academic school

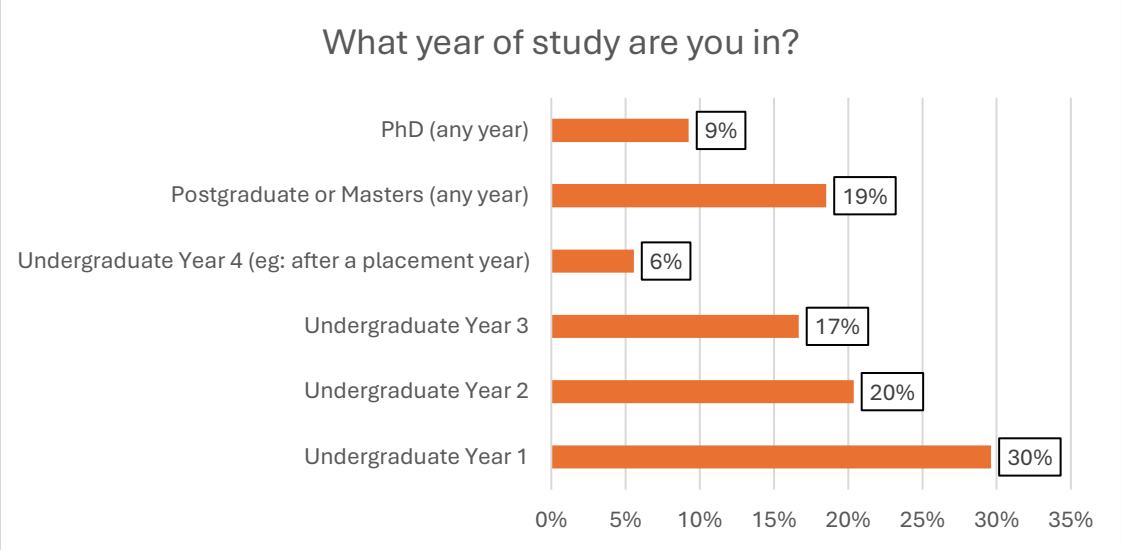


Figure 2 - Responses by year of study

Comment: The sample has a fair representation of students from different schools at NTU and across different years of study. There were no responses from students in the Law School. Possibly postgraduate and PhD students were over-represented or may be more likely to participate in research generally.

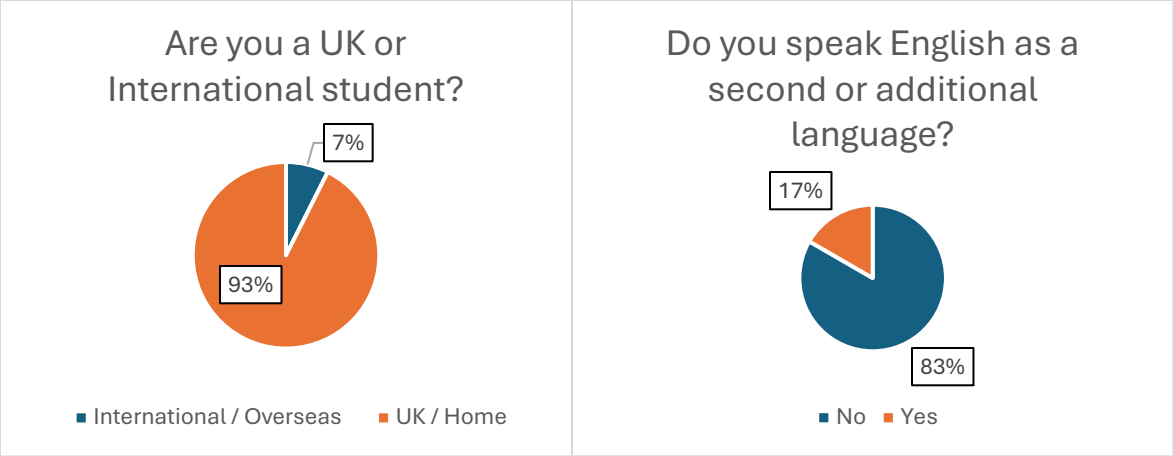


Figure 3 - Responses by UK/International status and English language

Comment: The majority of students were UK/Home and it is noted that DSA funding is only available to UK/Home students. Overall, it is commonly suggested that non-native English speakers may find GenAI similarly useful for dealing with various language related barriers.

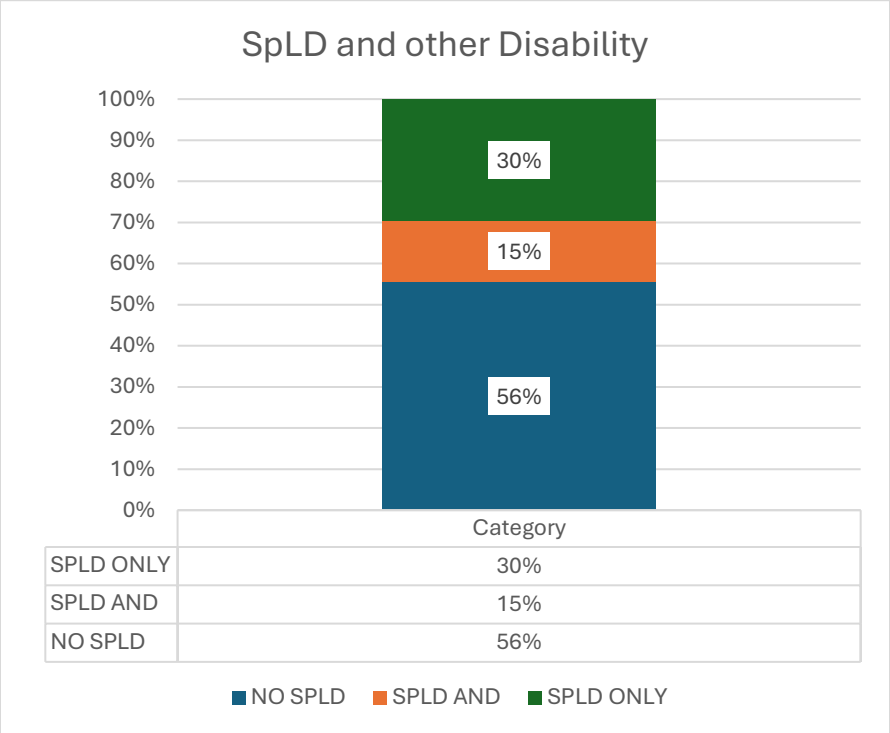


Figure 4 - Responses by SpLD and other disability

Comment: The above table categorizes students into three groups; those who declared an SpLD and no other conditions (30%), those who declared an SpLD and at least one other condition (15%) and those that did not declare an SpLD. In total, 45% of the sample reported an SpLD.

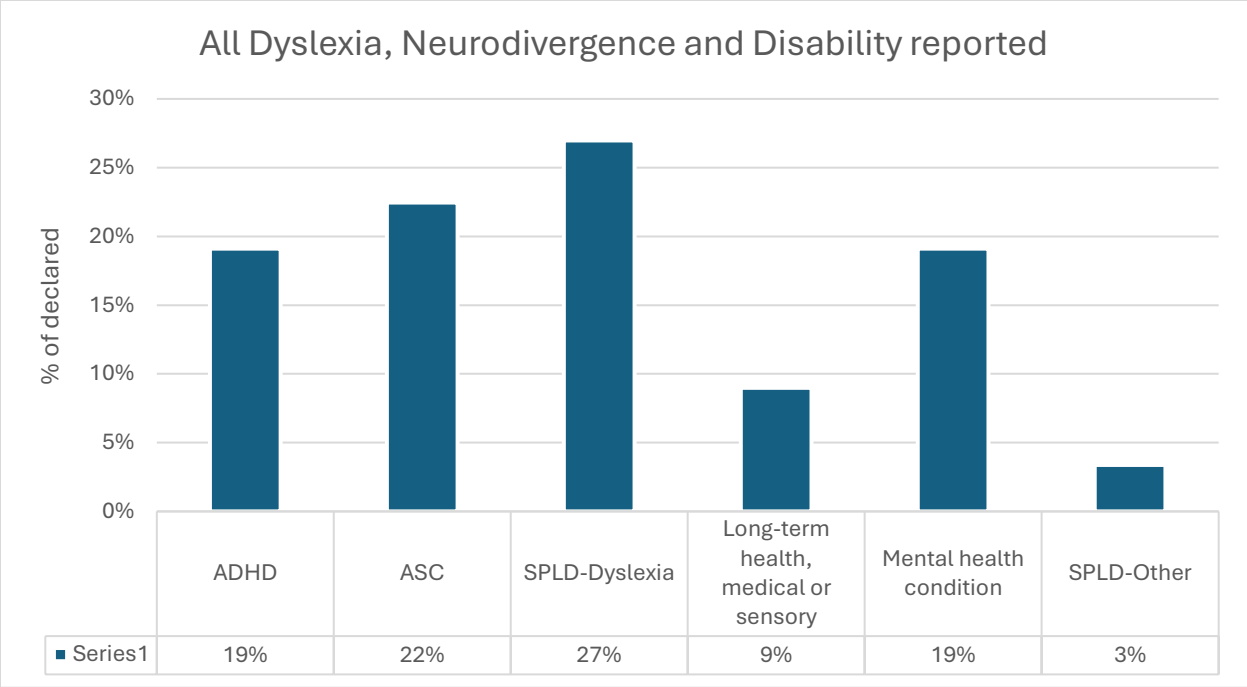


Figure 5 - Responses by all conditions reported

Comment: The above table is collated across declared conditions or neurotypes; many respondents (68%) reported more than one recognized diagnostic label: a total of 89 conditions were categorized from 54 individual responses.

Compared to the relevant HESA statistics from the most recent year available at the time of writing (2021/22), the overall response is felt to be relatively representative of NTU, although ASC may be over-represented (5% compared to 22% here) and Mental Health may be under-represented (19% compared to 29% here). We can note that 14% of the HESA recorded data is categorized under “Two or more conditions”.

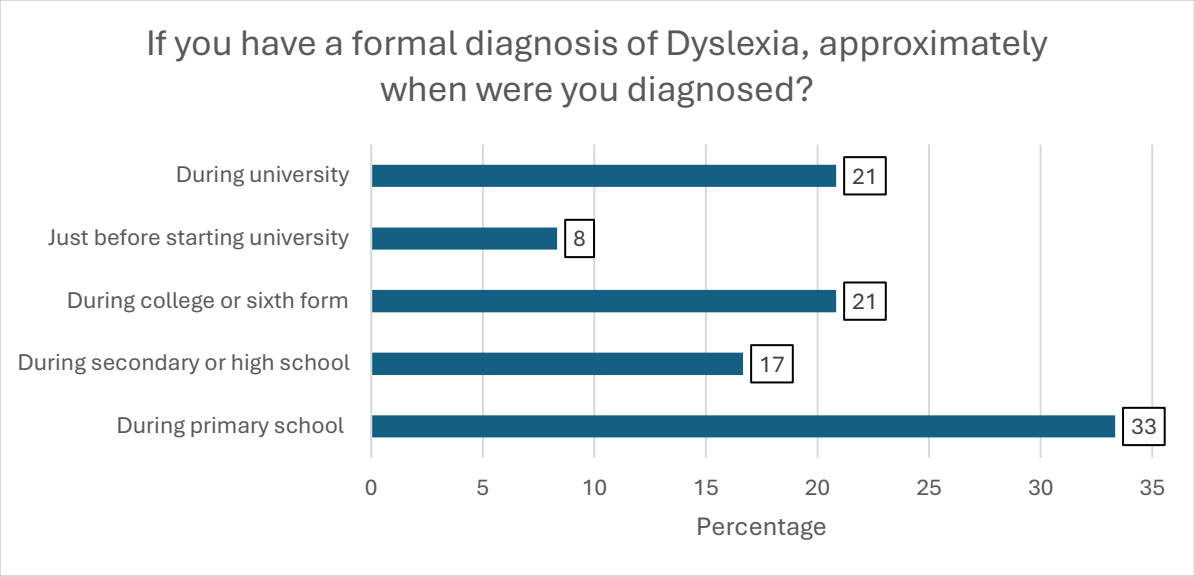


Figure 6 - Dyslexia diagnosis by time of diagnosis

Comment: Focusing only on those responses that disclosed a diagnosis of Dyslexia, we can see that a notable minority (29%) either received a diagnosis during or just before starting university.

One on level this can present barriers to accessing support in a timely fashion. Furthermore, it is broadly related by students that it often takes some time following a diagnosis to adapt and integrate any new strategies, technologies or methods for learning that emerge from the process. Students diagnosed at an earlier age generally report greater self-awareness and confidence with their learning strategies.

Of course: a similar set of concerns applies to other disabilities, but for the scope of this project; as well as the heavy emphasis on GenAI's text-manipulating features, it was felt that some additional focus on Dyslexia specifically was justified.

Gender	Percentage
Female	70%
Male	30%
Not Known	>5%

Ethnicity	Percentage
White	80%
All other ethnic groups	20%

Mature / Young	Percentage
Young	60%
Mature	40%

Table 1 - Background demographic data

Comment: The above tables are generated from data retrieved from central university systems, according to respondent ID or N numbers. In line with HESA reporting standards, the above data has been rounded to the nearest 5% to help preserve anonymity. While these were not a focus of the research, given the wider concerns around representation and demographic biases in GenAI, it was felt relevant to include in our report.

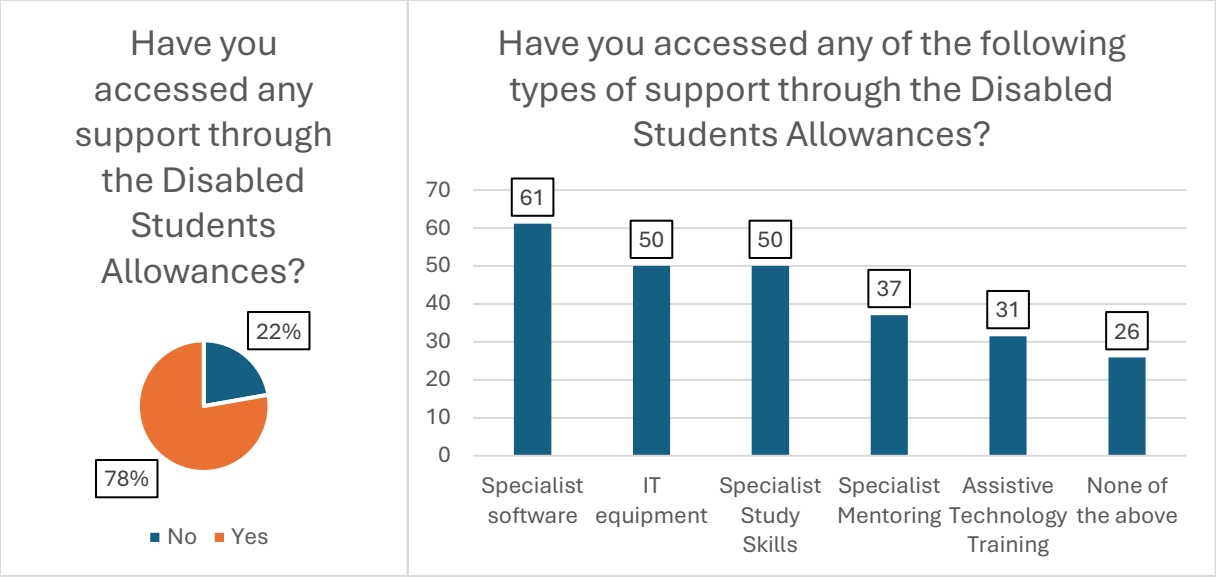


Figure 7 - Use of DSA support and types of support

Comment: Many students had accessed some DSA support although this is likely due to the sampling method used. Nevertheless 22%[1] of respondents had not accessed this support. The DSA is tailored to individual needs, so it is not a given that every student will see the relevant or be eligible for every type of support.

A 2019 evaluation of DSA support[2] also found that software and IT equipment were the most commonly awarded types of support. This evaluation noted that the reported take-up and SLC/SFE records differed significantly: likely due to the uncertainty of students around which aspect of their support was the responsibility of which provider (or their university).

Of the support used, it is useful to note that while specialist software and IT equipment make up the two most common groups, the use of training for these (assistive technology training) is comparatively low. This could imply many things: that students feel that the software and equipment is sufficiently 'easy to figure out' without training, or that students may not see the immediate benefits of undertaking training. Overall, it is important to consider the existing take-up of training, particularly when adding a completely novel and diverse set of technologies (GenAI) into the mix.

[1] This takes into account international students who would not be eligible for DSAs, although they may in some cases potentially be able to access disability-related bursaries or grants from their home countries.
[2] Department for Education/IFF Research: Evaluation of Disabled Students Allowances (DSAs), 2019

Awareness of GenAI

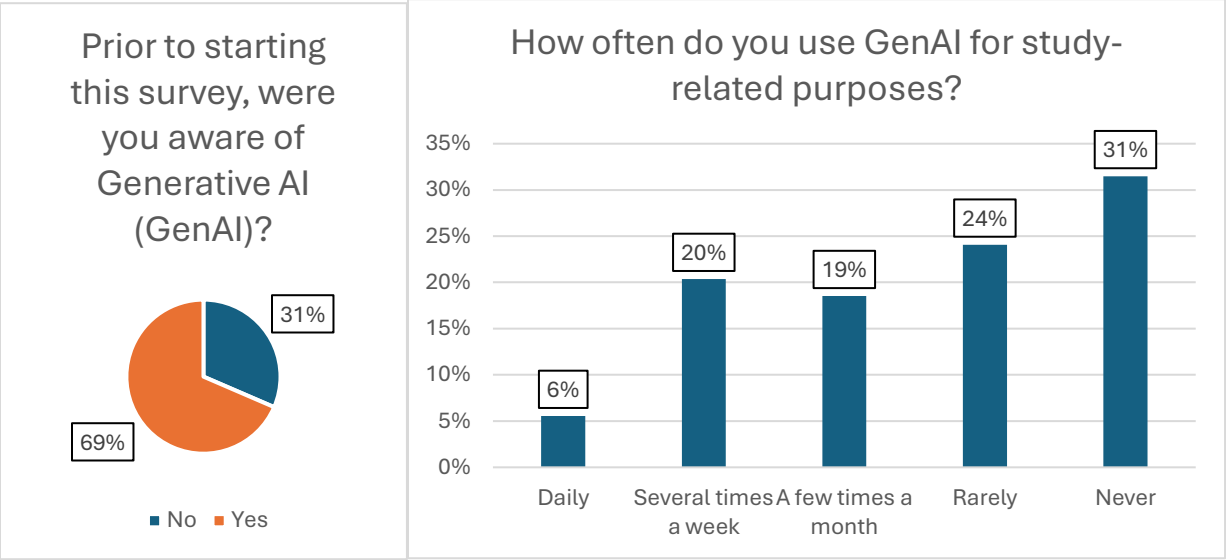


Figure 8 - Awareness and frequency of GenAI use

Comment: Due to the rapidly developing range of GenAI tools available, it is often challenging to establish a common understanding of exactly what a given term (AI, GenAI, GAI, LLMs) refers to. 31% of respondents claim to be unfamiliar with the term 'Generative AI' however as seen in the following chart, there is high awareness of current market leaders, so it may reflect more of an overall unfamiliarity with some of the labels and jargon surrounding this technology.

A similar 31% of respondents also claim to have never used GenAI for study-related purposes, while a combined 26% could be considered more frequent users of GenAI (Daily + Several times a week).

45% of students in our sample report using GenAI 'a few times a month' or more frequently, compared to the Tyton (2023) survey where 49% of students report using GenAI 'at least once a month'.

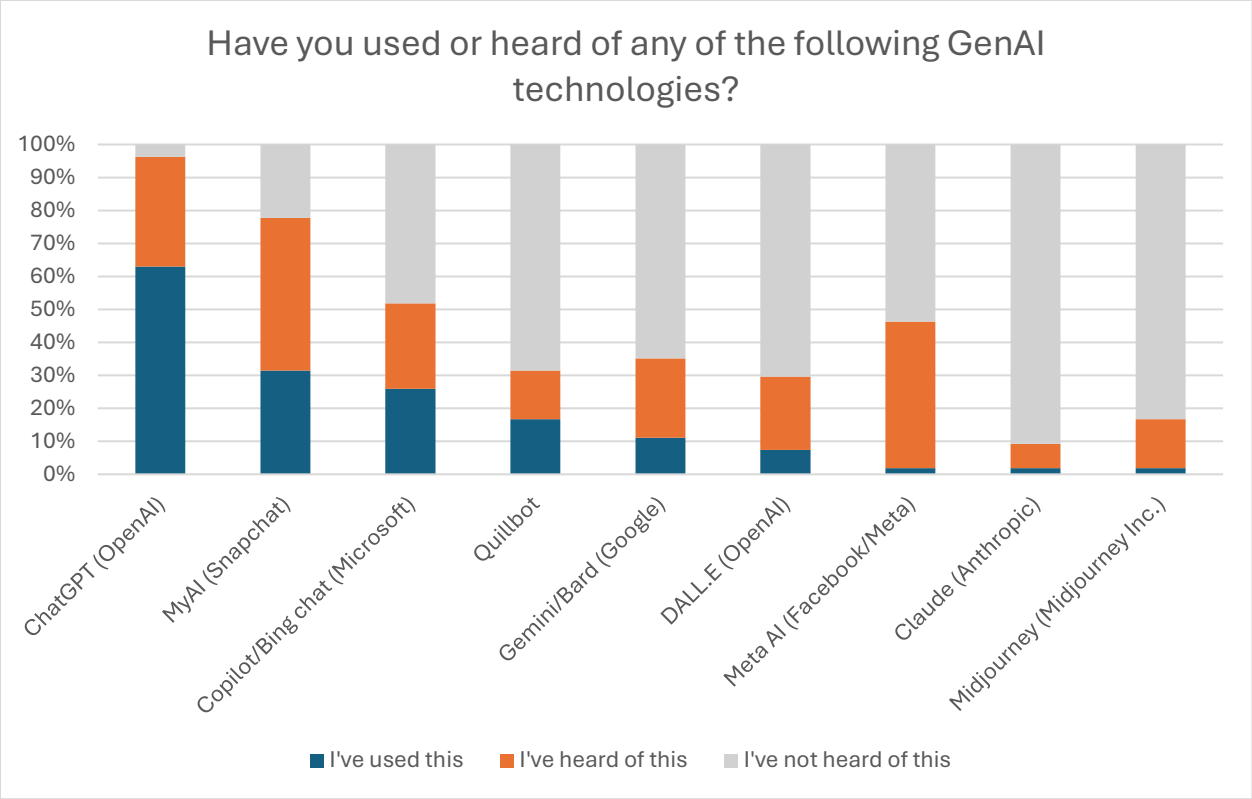


Figure 9 - Awareness and use of specific GenAI technologies

%	ChatGPT (OpenAI)	MyAI (Snapchat)	Copilot/ Bing chat (Microsoft)	Quillbot	Gemini/ Bard (Google)	DALL.E (OpenAI)	Meta AI (Facebook /Meta)	Claude (Anthropic)	Midjourney	Caktus
I've used this	63	31	26	17	11	7	2	2	2	0
I've heard of this	33	46	26	15	24	22	44	7	15	7
I've not heard of this	4	22	48	69	65	70	54	91	83	93

Comment: ChatGPT is unsurprisingly the current market leader in terms of awareness and usage, but it is valuable to note that general awareness of AI among students is also driven by platforms like Snapchat and Facebook/Meta. Overall, it is worth considering where students overall exposure to new technologies comes from and, where relevant, how these compare to any 'approved' platforms that universities may want to promote. Quillbot (Learneo Group) is a tool that is clearly targeted more towards students, whereas the others can be considered as more general-purpose platforms[3].

[3] Of the 'Other' options stated, Perplexity (3), Grammarly (3) and Glean (2) were the most common, that were not included in the options above.

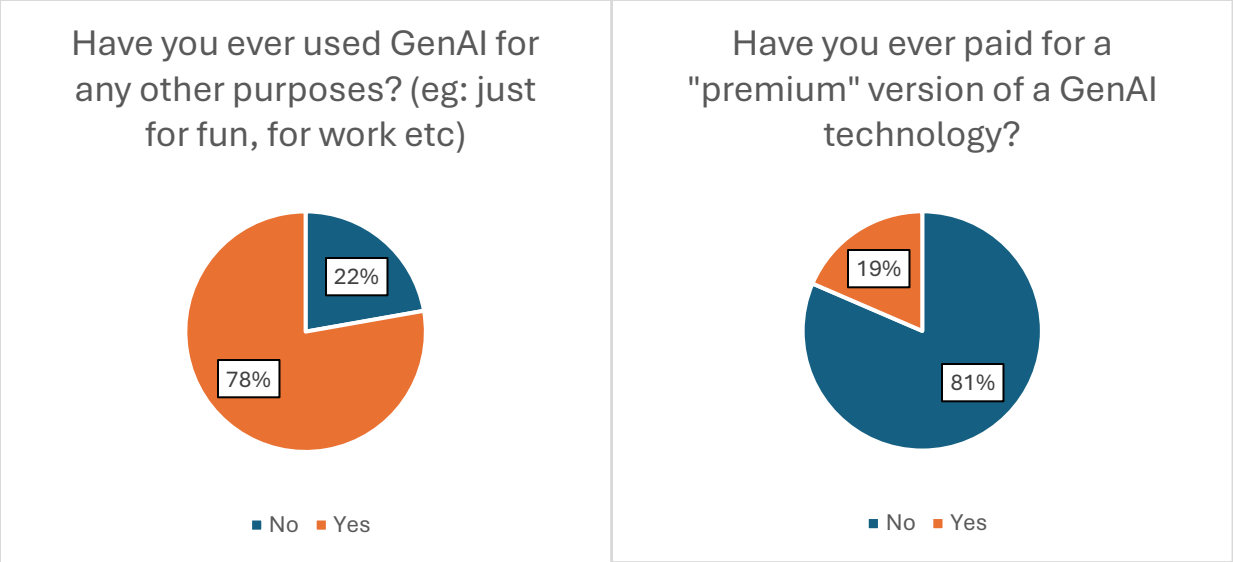
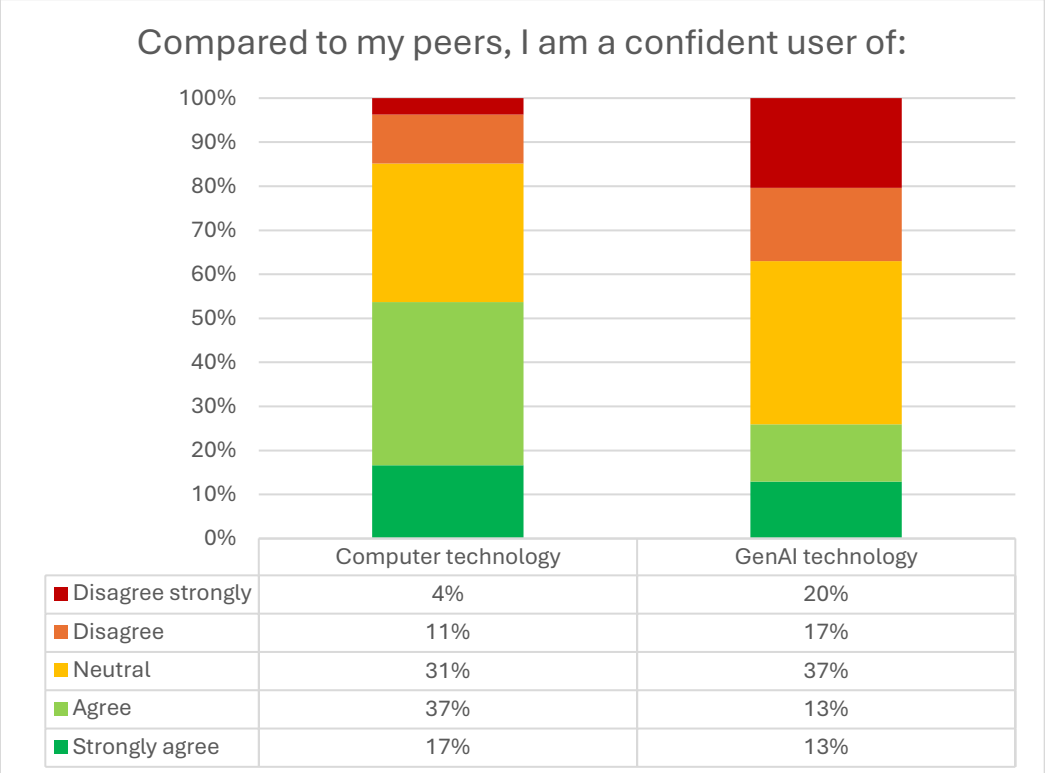


Figure 10 - GenAI for other purposes and premium usage

Comment: Many respondents (78%) had used GenAI for non-study related purposes and this is explored further in a later section. From this it seems that slightly more students have used GenAI for other purposes (22%: No) than for study (How often do you use GenAI for study related purposes? 31%: Never).

A notable minority (19%) had paid for a “premium” version of this technology. We did not specifically ask which paid technologies were used (or how much they paid, or how long they held a subscription) though it would presumably follow similar patterns as the above.

Experiences with GenAI



	Computer technology	GenAI technology
Disagree strongly	4%	20%
Disagree	11%	17%
Neutral	31%	37%
Agree	37%	13%
Strongly agree	17%	13%

Figure 11 - Confidence with computers and GenAI

Comment: To get a baseline view of how 'tech-savvy' respondents felt they were, we asked about their confidence regarding any computer technology. No particular definition of 'computer technology' was provided but we assume it would cover any work or study related activity across both mobile devices and laptop/desktops. As shown, 54% of respondents considered themselves to be 'confident' computer users, compared to only 26% when regarding GenAI (Strongly Agree + Agree). Given the slightly self-selecting basis of respondents to a technology-related survey, we might assume that levels of confidence among the broader student population are lower than those stated above.

Much has been written about younger generations as 'digital natives' although there is considerable scope to further consider how various technologies are critically understood and used intentionally. Users of all generations may find themselves using technology somewhat uncritically at times; simultaneously, users are often limited in the amount of meaningful agency they can realistically exercise.

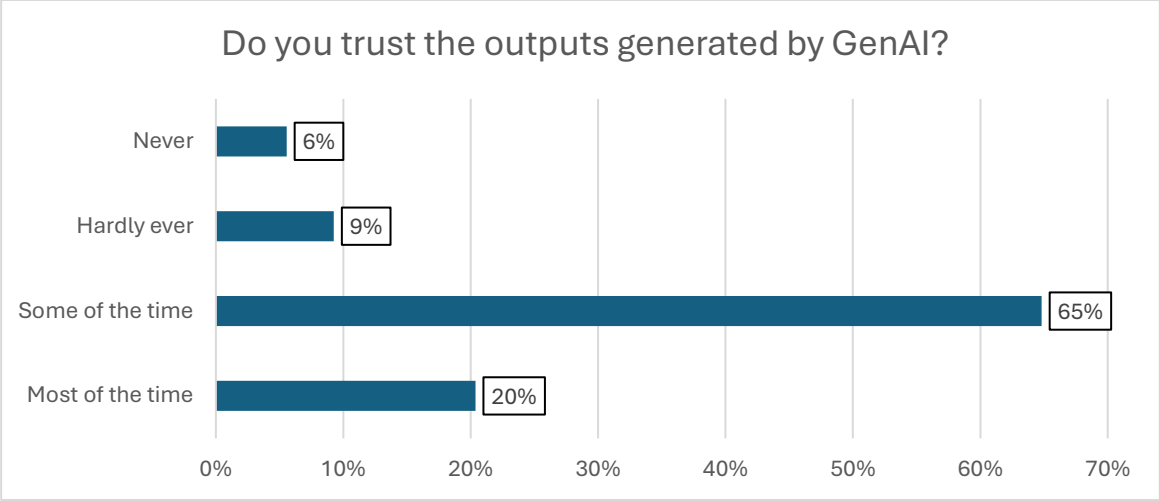


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Figure 12 - Trustworthiness of outputs

Comment: The majority of respondents (65%) only trust GenAI 'some of the time' with the remainder being roughly split between more trusting (20%) and less trusting (15% Hardly ever + Never).

This is a fairly broad question, but it helps illustrate the central sense of uncertainty around GenAI. It could be argued that more experienced users would trust the outputs less, as they become aware of the limits of the technology and do not take it at face value. Alternatively, it could be argued that more experienced users would trust the outputs more, as they would be better aware of the limitations, more able to prompt and filter, and to set realistic expectations.

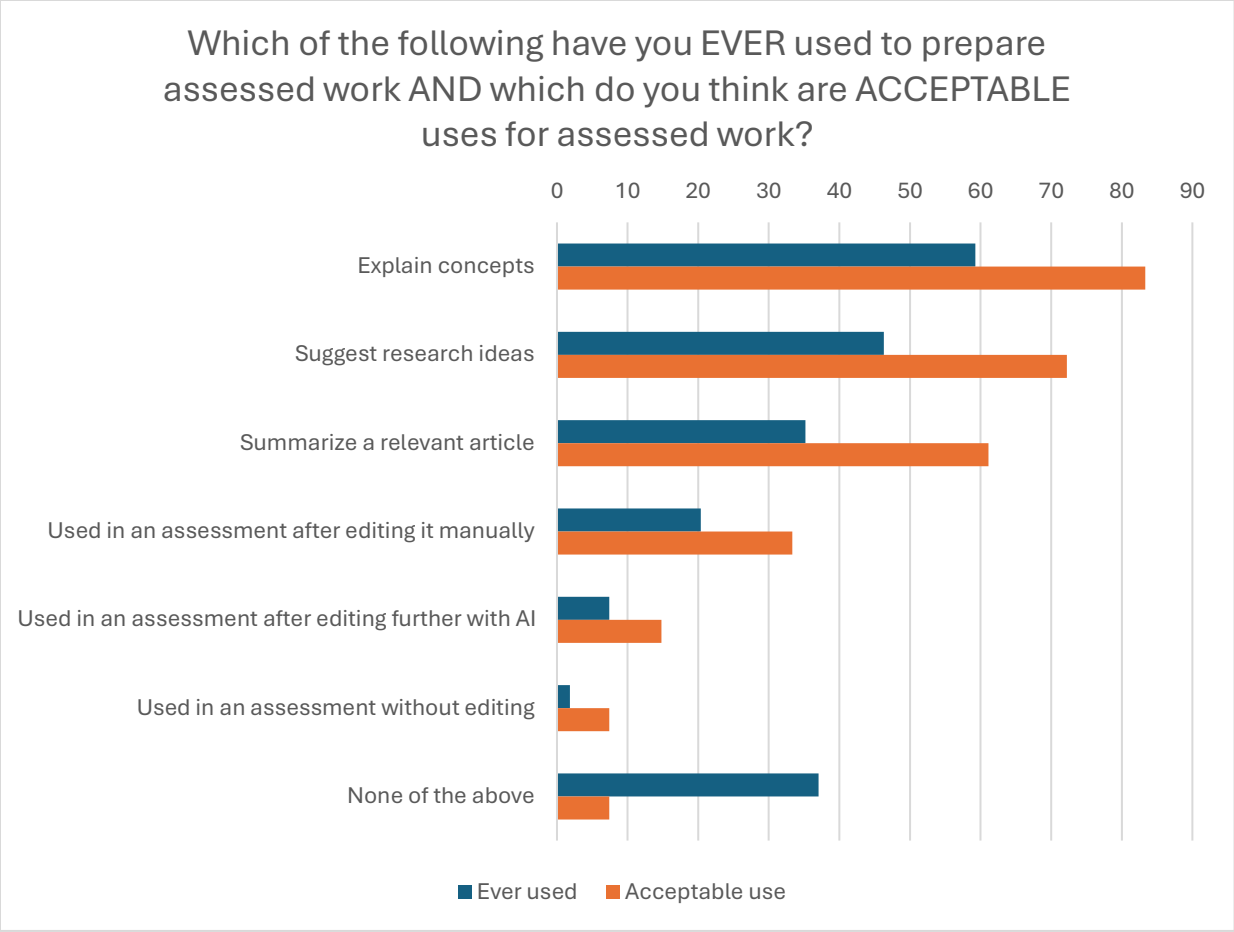


Figure 13 - Specific uses of GenAI

Comment: We can arguably see that students are quite accepting of GenAI use even when they personally have not seen the value in doing so: 37% have not used GenAI for any of the tasks listed above, but only 7% feel that it would be unacceptable to use for any tasks. There is a clear distinction between the earlier, more exploratory stages of an assessment, versus those tasks which are directly included in a final piece of work for assessment.

Category	Ever used %	Acceptable use %
Explain concepts	59	83
Suggest research ideas	46	72
Summarize a relevant article	35	61
Used in an assessment after editing it manually	20	33
Used in an assessment after editing further with AI	7	15
Used in an assessment without editing	2	7
None of the above	37	7

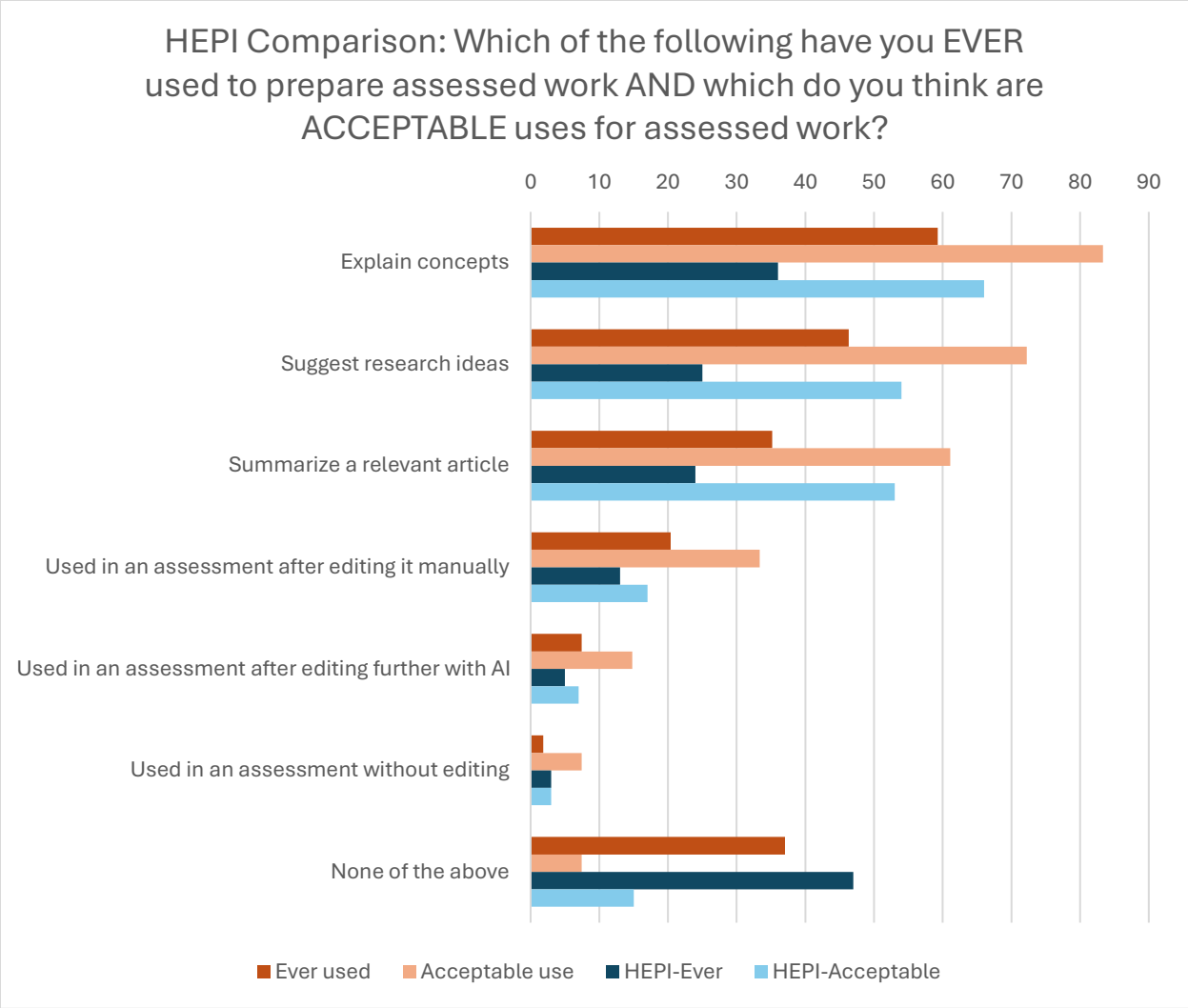


Figure 14 - Specific uses of GenAI, HEPI comparison

Comment: This question was taken from HEPI Policy Note 51 'Provide or punish? Students' views on generative AI in higher education' (February 2024) and as such we can compare our sample to the sample of 1250 as polled by HEPI (HEPI-Ever and HEPI-Acceptable).

The first three categories (Explain..., Suggest..., Summarize) show a greater divergence, with our sample more likely to have ever used GenAI for these tasks by up to 23%. The later categories regarding more direct use in assessments show more convergence with only up to 7% difference.

Open question: "What do you think are the main POSITIVES OR BENEFITS of using GenAI, when compared to other types of learning or studying?"

Category	Frequency	Example
Explaining	18	"When used to explain a concept of a new topic you can ask AI to break down the topic to understand it in more depth."
Speed	14	"It's quick and easy at finding articles or ideas to develop your project on"
Summarising	11	"My reading and processing speed is slow so it takes me longer to read an article or my proof read my assessment."
Unique/creative	8	"Could be a starting off point for generating ideas"
Not having to ask a person	7	"It's like having a second person in the room without the pressures of socialising."
Simplifying	6	"Easy to summarise articles that use complicated language, break down plans and theories into bullet points"
Spelling, punctuation, grammar	4	"It can help you learn how to structure sentences and write correctly with proper grammar. "
Personalised	4	"Personalised searching and problem solving"
Structure	2	"It could help structure an assignment or help with the beginnings of an assignment when there is just a blank page and you don't know where to begin."

Table 2 - Open comments on positives or benefits of GenAI

Comment: The main themes emerging are somewhat reflective of the uses defined by the earlier closed survey questions, however some further variety is expressed. Speed and availability is clearly highly valued, whether directly referenced or inferred through the emphasis on summarizing and simplifying.

Open question: "What do you think are the main NEGATIVES OR RISKS of GenAI, when compared to other types of learning or studying?":

Category	Frequency	Example
Inauthentic learning	23	"The line being blurred between whats efficient and beneficial to your learning or what may be efficient but hinders your learning e.g. by getting AI to do too much."
Misinformation/accuracy/bias	22	"Incorrect references, incorrect facts (no fact checking if used incorrectly)"
Plagiarism	19	"Plagiarism, because you have no idea where the AI is scraping its data from and even if you think it is original content it could be copying other sources word for word."
Needs its own set of skills	15	"Doesn't always out put what you want or understand what you want out of it."
Vague	9	"There is a lot of superfluous language and 'chatter' which needs to be sifted through unless commands are clear and precise."
Ownership of my inputs	2	"It is also scary that my work could be spread further or used for something without my consent."

Table 3 - Open comments on negatives and risks of GenAI

Comment: Students are clearly alert to the risks of inauthentic learning and misinformation although as with any novel approach, we should consider whether merely being alert to the risk is sufficient to be able to successfully mitigate it. The new skills and work required in learning the tools and sifting through vague outputs is also reflected.

Specific uses for Dyslexia, Neurodivergence and Disability

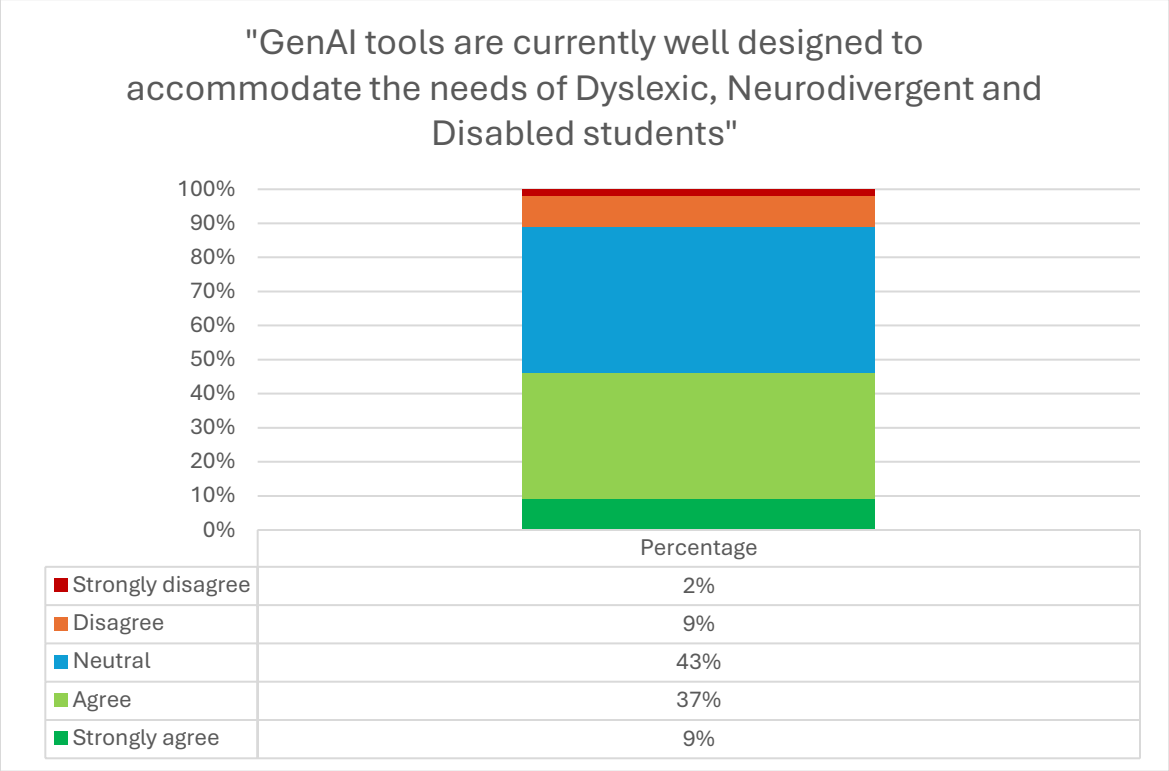


Figure 15 - GenAI designed tools for Dyslexia, Neurodivergence and Disability

Comment: 46% of respondents agreed (Strongly agree + Agree) that GenAI tools broadly accommodated their needs, although a similar 43% were neutral on the matter, so it could be interpreted as cautiously optimistic, but not overwhelmingly positive.

For comparison, the following single-question poll was conducted with members of a Dyslexia & SpLD professional association[4], with 31 responses: *"Broadly speaking and based only on your current level of understanding: Do you think students with SpLDs, stand to benefit from the use of tools like ChatGPT and Generative AI?"*

71% of respondents agreed with the above statement, which may hint at greater levels of optimism among professionals, while students themselves could be more circumspect. Clearly it is essential to consider and balance the multiple perspectives of stakeholders in the wider debate: technology providers, disability specialists, professional tutors, students and universities.

[4] Online poll carried out in September 2023 via conference attendance and mailing list for PASSHE – Professional Association for SpLD Specialists in Higher Education.

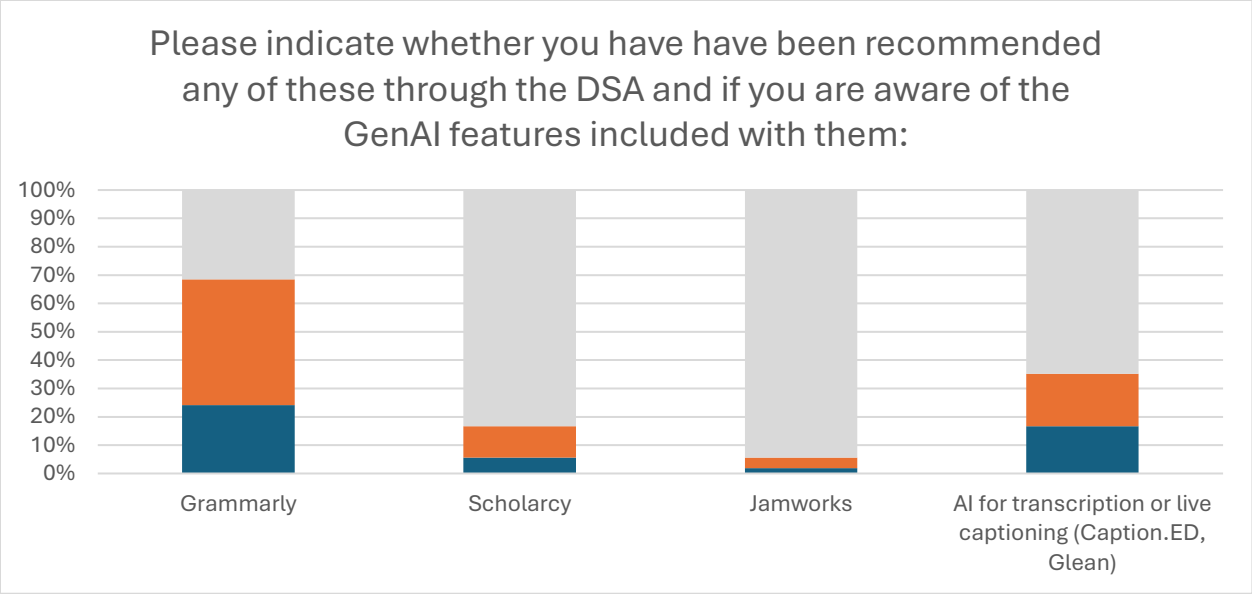


Figure 16 - Awareness of GenAI in DSA-funded technology

	Grammarly	Scholarcy	Jamworks	AI for transcription or live captioning (Caption.ED, Glean)
I've got this and I have used the GenAI features of it	24	6	2	17
I've got this but I haven't used or didn't know there were GenAI features in it	44	11	4	19
I've not got or heard of this	31	83	94	65

Comment: As discussed earlier, many students are awarded assistive technology through the DSA and these tools are increasingly incorporating Generative AI in various ways. We focused on the tools that we were most familiar with although there are many more DSA-fundable options beyond this. (See the DSA product review process for more).

Trying to assess many different technologies at once is imperfect but overall, it is interesting to note that even where such features are available, students may not be aware of them; or to be aware of what appropriate and inappropriate uses may be for their respective courses. It would also be unrealistic to expect academics to stay up to date with the huge range of tools available (DSA and otherwise).[5]

[5] For reference, Grammarly launched in 2009; although the more 'generative' features have only emerged more recently. Scholarcy launched in 2018 although it focuses more on summarizing existing texts.

Use of GenAI for advice

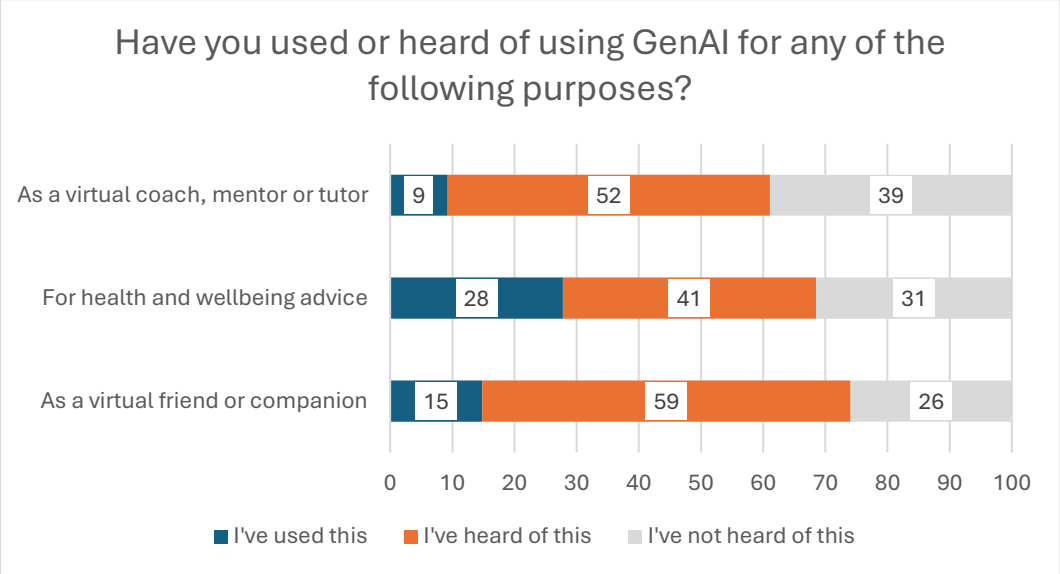


Figure 17 - Use of GenAI for advice

Comment: Overall awareness of some of the more elaborate uses of GenAI is relatively high, though actual usage is relatively low.

Interpretation is key, as the prior HEPI report conflates 'Using GenAI to explain concepts' with a headline claim that "36% of students use GenAI as an 'AI private tutor'". Our sample, when directly asked about use as a 'virtual coach, mentor or tutor' reported only 9% had done so; despite a greater number using GenAI to explain concepts (59%).

Our sample are more likely to receive DSA-funded specialist mentoring and specialist study skills tutoring but there is some awareness of virtual approximations. Overall, there will be a greater population of Dyslexic, Neurodiverse and Disabled students at any given university than those who declare a disability, and those who are eligible for and receiving DSA-funded support at any given point.

Jamworks seems to have launched in 2024, and like Caption.ED (2022) and Glean (2020) these are primarily aimed at transcription of lecture recordings, but have other features and can be used in other ways.

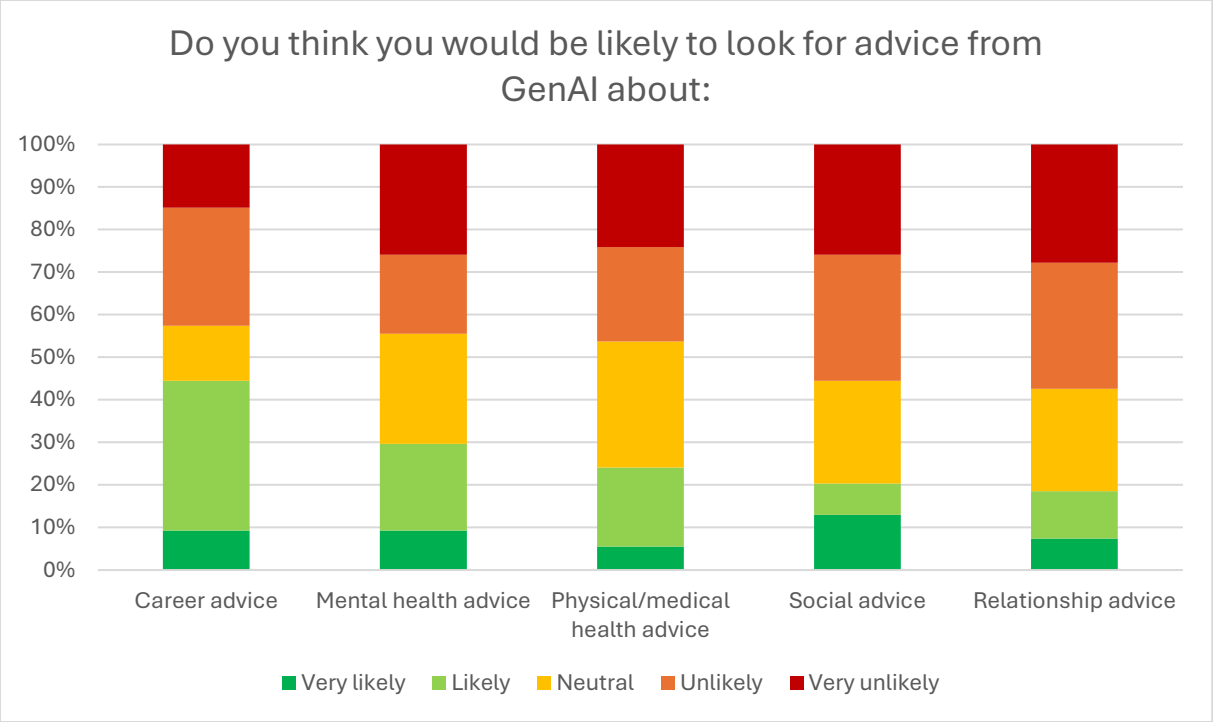


Figure 18 - Acceptability of GenAI for different types of advice

Comment: Overall the results above echo previous findings around the trustworthiness of GenAI for complex and personal issues and many students are skeptical of using GenAI for these needs. Given the extremely low costs (financial, time, social effort, perceived confidentiality) compared to seeking advice from a professional, we could suggest that students are likely to try it out, even if they also treat the results with due skepticism.

While a detailed analysis was not performed, it was observed that many Autistic students reported using GenAI tools as a supplement or alternative to other routes, as it avoided social and communication barriers: *"It is also nice to be able to have a conversation with GenAI because unlike people, the technology will not have any offense or judgement or require me to follow 'social rules'*

Other students also reported they sometimes could feel 'like a burden' when asking for help and advice from their wider support network, which was mitigated using GenAI. However, there were also comments that felt a reliance on avoiding personal contact was a potential risk, from long-term reliance on these tools: *"Doesn't push me to develop in person communication skills"* and *"It helps me with my coursework and writing, which isn't helpful for when I need to socialise."*

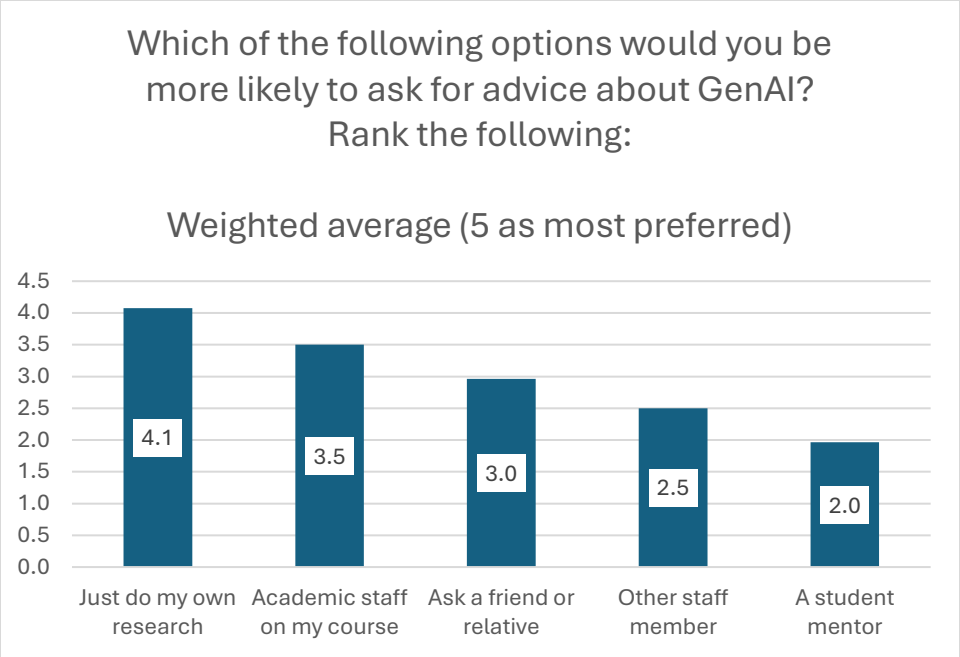


Figure 19 - Where do students find advice about GenAI?

Comment: Students are most likely to do their own research, followed by discussing with the academic staff on their course; the latter of which hopefully evidences a desire to stay within the appropriate guidelines provided by the course. Overall, it is useful to note that GenAI is a broad topic and students will be presented with multiple perspectives and opinions on the technology.

Open question: "If you have used GenAI in any other non-study related ways and would like to share any positive or negative experiences, please state below":

Category	Frequency	Example
None/NA	27	"I haven't used GenAI for non-study related ways"
Health/medical	5	"Found it easy to find symptoms related to illness."
Emails/work	5	"I use it to help me write emails professionally"
Food/domestic	5	"Good for creating vegan takes on recipes"
Search engine	4	"It can be useful for finding things instead of being overwhelmed by the amount of results you get when you just use google"
Novelty/fun	3	"Sometimes it's just fun to talk to a robot."
Communication	3	"GenAI has helped me interpret meanings in messages from friends and in relationships"
Images	2	"I have tried to use AI to generate images, however, they often contain typos or look fake"

Table 4 - Open comments on non-study uses of GenAI

Comment: There is a range of non-study related uses represented however there are no themes that seem to be significantly more prominent than others. In terms of searching for information, it has been noted that traditional search engines are both becoming more likely to incorporate AI; whilst also diminishing in utility due to the presence of AI-generated misinformation.

Open question: "What aspects of your course do you feel present the biggest challenges to you, in respect of Dyslexia, Neurodivergence or Disability?"

Category	Frequency	Example
Writing	21	"Big texts to write and taking notes." - "Structuring essays" – "Making my work sound professional"
Organisation/time management	13	"Being able to stay on topic (particularly when looking for my own references), organisation and time management
Volume of reading	10	"Time and energy it can take to read and process articles and assignment info."
Clarity/simplicity	9	"Lack of clear and concise briefs" – "Understanding what my lecturers want"
Keeping up in lectures, lecture capture	8	"Taking in information during lectures making sure not to miss anything"
Presenting, groups, social aspects, engagement	8	"Group work and feeling comfortable around other people." – "Lack of engagement in lessons and lack of working relationships with teaching staff"
Finding research	6	"Finding refences for any of my modules has been challenging"
Memory	4	"Remembering multiple topics for exams"
Mental health, burnout	2	"Time management, overwhelm, balancing different aspects of life to stay on task but also mentally healthy"
Places to work	1	"The absence of quiet areas to work in"

Table 5 - Open comments on Dyslexia, Neurodivergence or Disability

Comment: This and the two following questions are closely linked, in terms of disability-related barriers and how GenAI may potentially be helpful or harmful towards addressing the same.

Many of the themes above are reflective of commonly reported challenges for all students, and it should also be noted that not all challenges are necessarily unwelcome. There are some tasks that, at least on the surface, GenAI seems potentially more suited towards than others. This is open to interpretation and what suites one academic discipline as a 'handy shortcut' may be completely unfamiliar and inappropriate for another.

Open question: "Can you give any specific examples of things GenAI does that are particularly HELPFUL in dealing with the challenges above?"

Category	Frequency	Example
Starting/Breaking down question/Brainstorming	14	"The answer it gives might not be 100% correct but can give a clear direction on where to focus on first."
Summarizing text	12	"Can help with summarising work/articles and help with editing assignments."
None/NA/not sure	11	"I haven't used any genAI for this."
Rewriting/proofreading	9	"Proofreading and suggesting a more academic tone"
Recording/transcription	8	"The transcripts from online lectures mean that I can reread what has been said and make more sense of it."
Time/speed	6	"AI helps me summarize the content quickly, and later on I add more info"
Explanations	5	"It allows concepts to be explained to me which helps with my information processing issues."
Statistics, coding	2	"Assisting with debugging code"
Understanding communications	1	"I can ask GenAI to help me understand written communications and to craft appropriate responses"

Table 6 - Open comments on GenAI helping address challenges

Comment: The trends in the positives noted are similar to the previous closed and open questions on the topic although it aims to link these a little more closely to disability-related challenges; which can often be a subtle distinction. On the surface, students may use or describe similar approaches. Some groups may report these as general preferences while for others are they are a more distinct and urgent need. Other emerging studies, including close analysis of actual GenAI chat logs as used by students are likely to be valuable. Again, it is worth noting that many respondents could not think of, or had not used GenAI to address their disability-related needs.

Open question: "Can you give any specific examples of things GenAI does that are NOT HELPFUL for dealing with the challenges mentioned above?"

Category	Frequency	Example
No/NA/Not sure	18	"Never used"
Verbose/vague/repetitive	12	"Sometimes it over complicates what I want to say when I just want something simple and easy to understand"
Replacing social contact/personal input	8	"Doesn't provide personal feedback on your essay" – "Doesn't push me to develop in person communication skills"
Prior knowledge/time investment to use/distraction	5	"You need to have a certain knowledge to understand the answer given to make sure its correct. " – "Has a lot of features, which can be helpful for some but are often a distraction for me."
Fact checking	5	"Explains the wrong thing and gives false information"
Recording/transcribing accuracy	4	"The transcripts aren't always accurate and can sometimes add to the confusion."
Lack of sources	3	"Not knowing where the information came from"

Table 7 - Open comments on GenAI not helping to address challenges

Comment: Sensitivity around written, and verbal/social communication comes through strongly in the top two themes noted here (after those who did not report any issues). This may be particularly relevant to note when considering overall framing, policies and practices for providing feedback. Similar concerns have been raised over other automated written corrective feedback systems (Grammarly etc) in that while they can be accurate, it may be students who already have a strong grasp of the language who can benefit the most from their use. Students who are less confident are more likely to accept questionable corrections and over time become more alienated from their own efforts.

Overall accuracy and lack of sources are commonly stated concerns and in fairness, these limits are frequently advertised by the tools themselves. Nevertheless, it is worth noting that these may not be as urgent as the other critical themes or concerns here. Students clearly have some skepticism of the information provided, or are at least frustrated that the promise doesn't (yet?) live up to the reality.

AI detectors and plagiarism

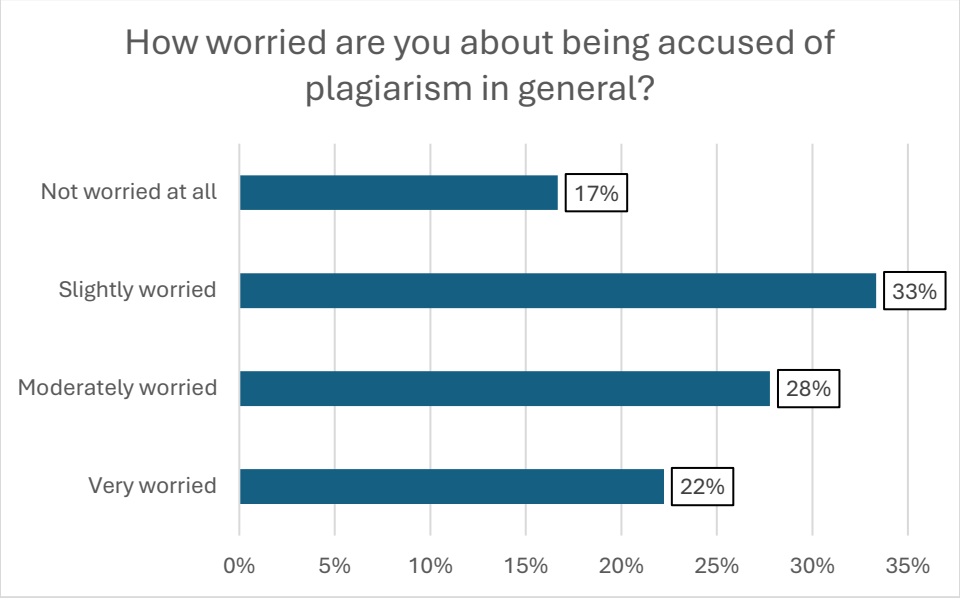


Figure 20 - Plagiarism concerns

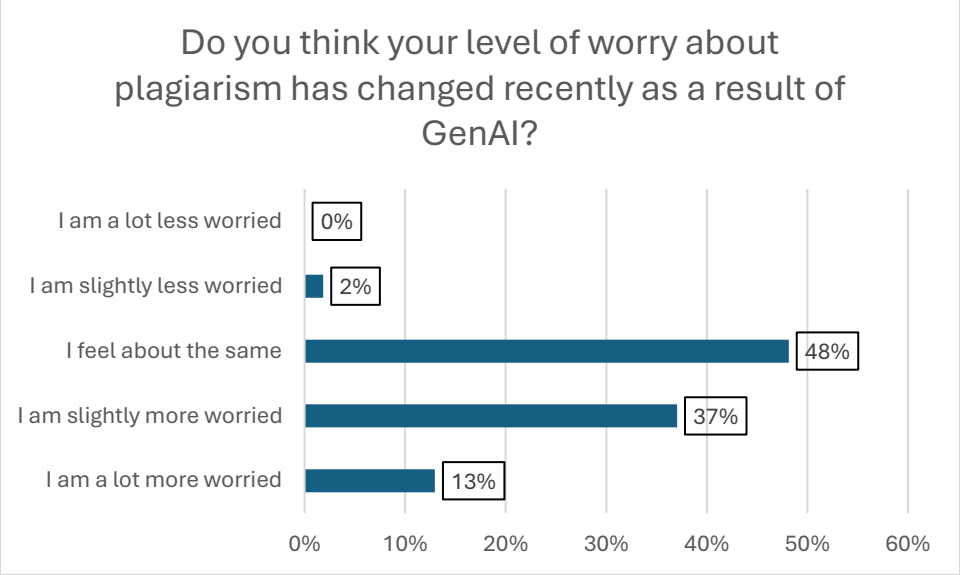


Figure 21 - Plagiarism and GenAI

Comment: Only 17% of respondents were 'not worried at all' regarding a potential accusation of plagiarism. As established earlier, 31% of respondents claim to have never used GenAI for study related purposes and clearly it is possible to plagiarize without the use of GenAI. The responses are split evenly between those who feel 'about the same' (48%) versus those who are more worried (50%, Slightly… + A lot…)

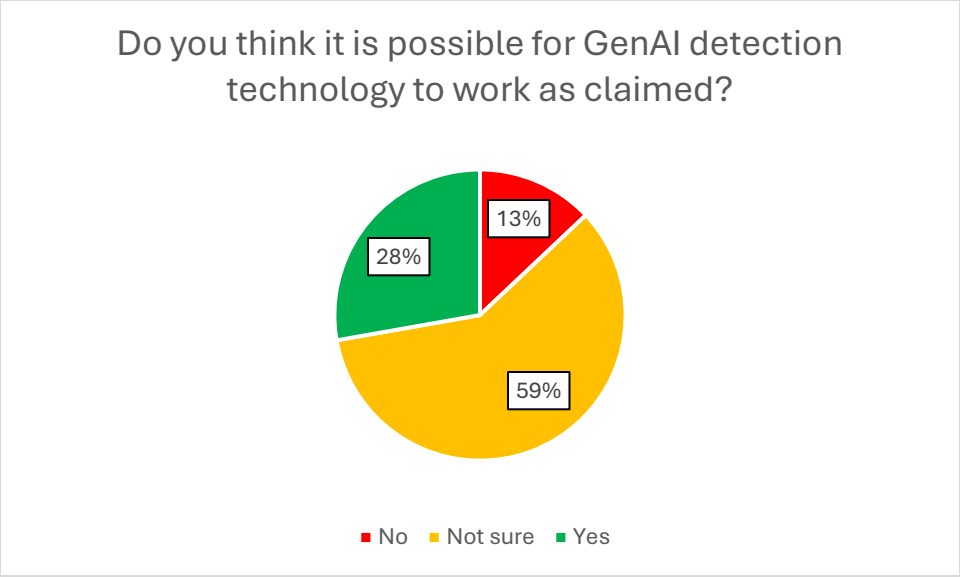


Figure 22 - GenAI detection

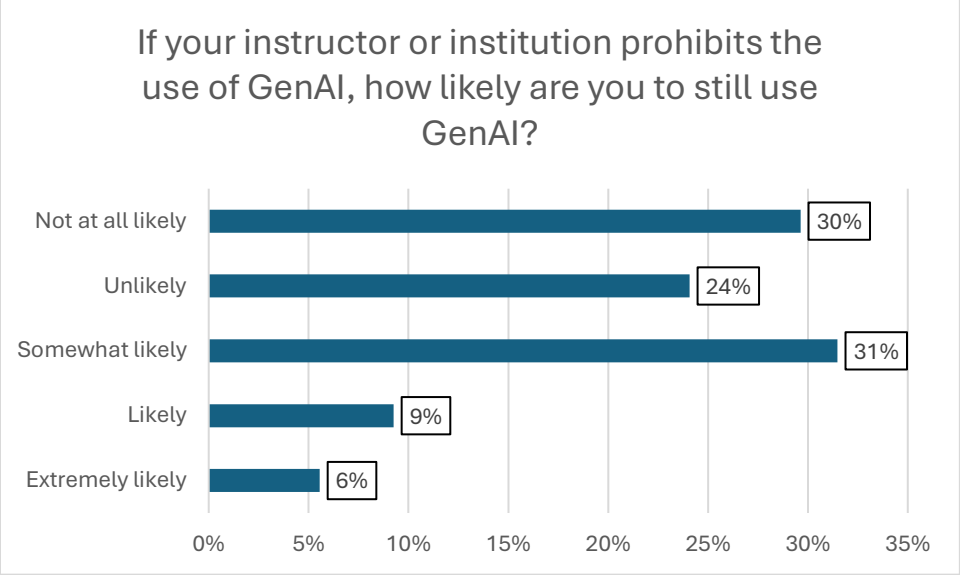
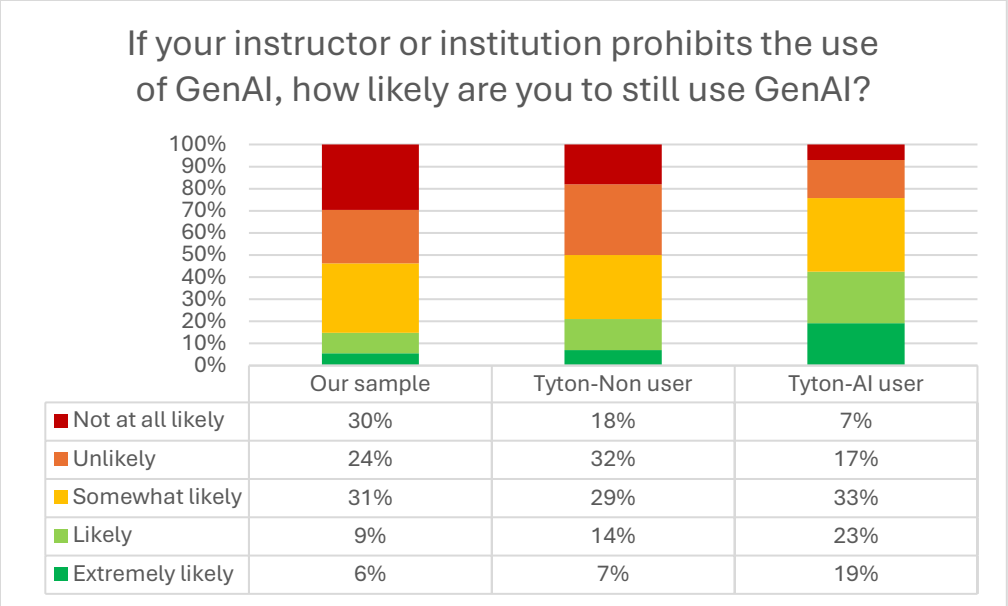


Figure 23 - GenAI prohibition

Comment: Given the novelty of GenAI, it is unsurprising to see a mixed response as to whether it is possible to detect the use of GenAI. Students are more likely to think it is possible (28%) than impossible (13%), even if a clear majority are unsure (59%) either way.

Where GenAI prohibitions are in place, only a few respondents report that they would be likely to use GenAI anyway (15% - Likely + Extremely likely), while others are 'on the fence' (Somewhat likely – 31%). This is discussed further in the following chart with reference to another survey/poll.



	Our sample	Tyton-Non user	Tyton-AI user
Not at all likely	30%	18%	7%
Unlikely	24%	32%	17%
Somewhat likely	31%	29%	33%
Likely	9%	14%	23%
Extremely likely	6%	7%	19%

Figure 24 - GenAI prohibition, Tyton comparison

Comment: The Tyton survey (2023) defined 'non-users' of AI as those who have experimented with GenAI writing tools once or twice, while those who are 'users' are those who reported using the same tools monthly, weekly or daily.

Overall, our sample seems to reflect the views of infrequent users of GenAI more closely. While this could be impacted by multiple factors other than familiarity with the technology itself, it does serve to reinforce the mixed or even slightly ambivalent view towards GenAI from our sample.

Uses of GenAI in teaching and assessment

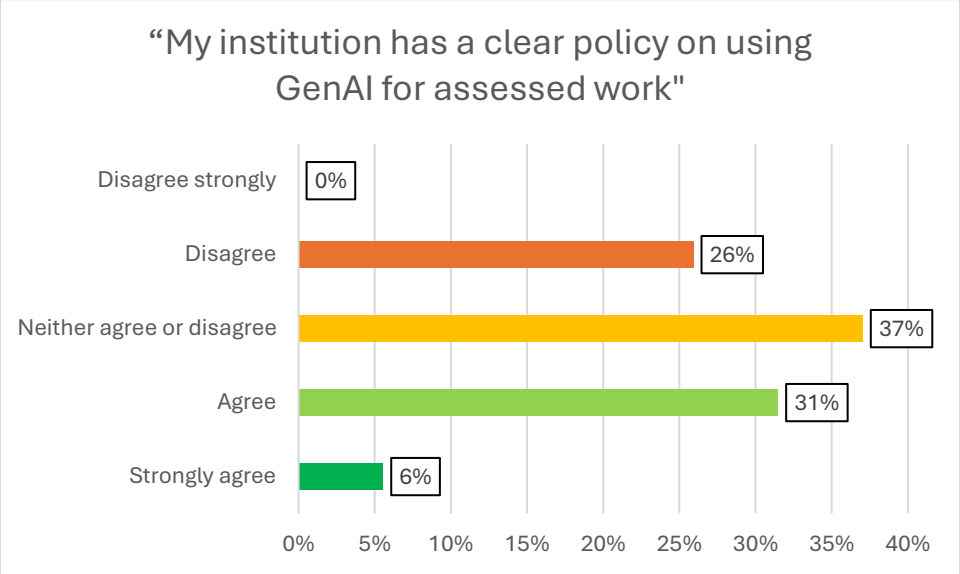


Figure 25 - Clarity of GenAI policy

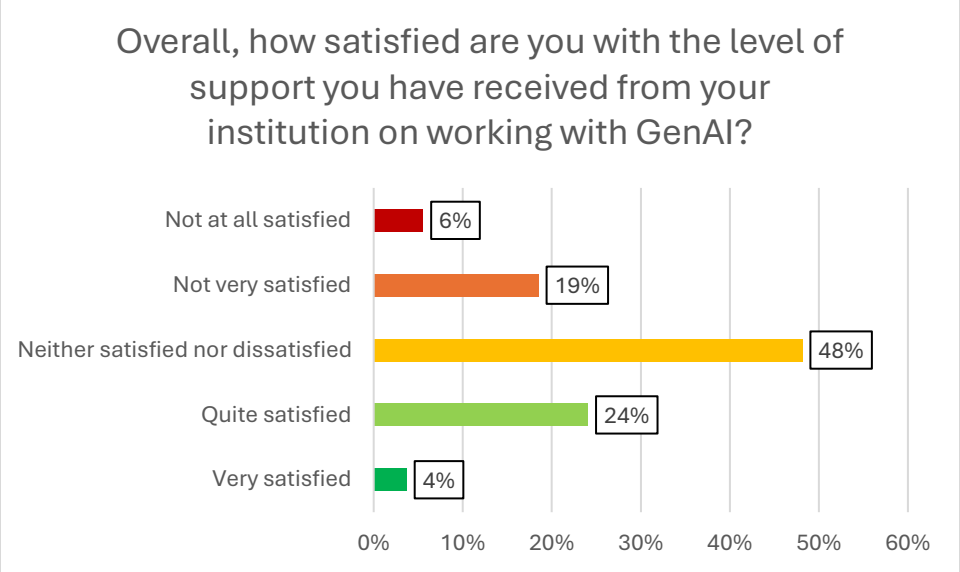
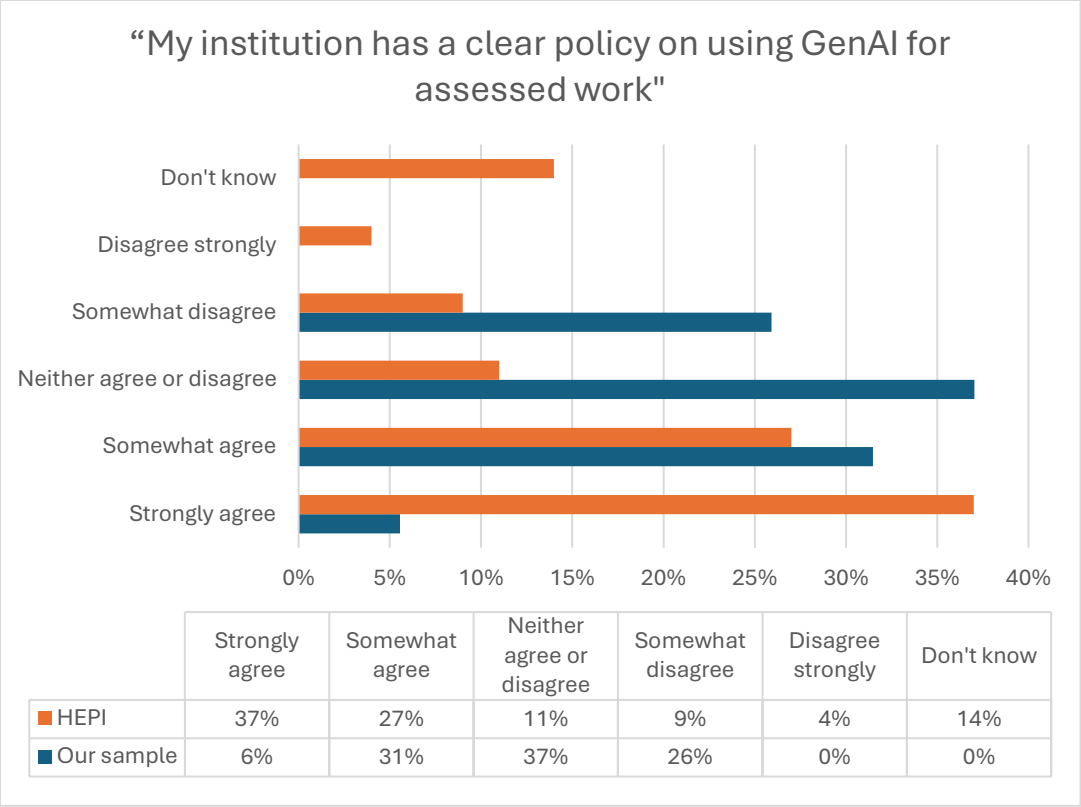


Figure 26 - Level of support around GenAI

Comment: For a new technology with varying relevance across a range of disciplines, it could be argued that only a minority of students are actively unhappy with the clarity of policies (26% Disagree) and support currently available (25% Not at all + Not very satisfied). Many are somewhat indifferent either way and there is no doubt, room for improvement. This is compared to another survey in the following charts.



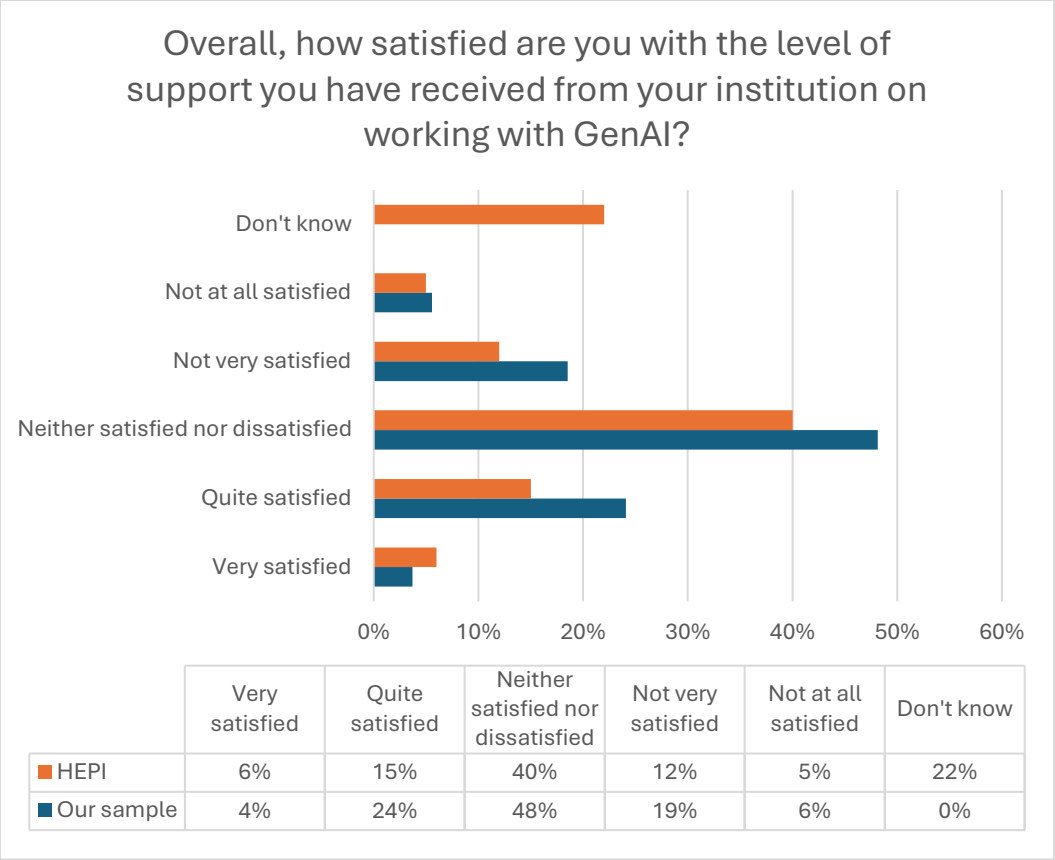
	Strongly agree	Somewhat agree	Neither agree or disagree	Somewhat disagree	Disagree strongly	Don't know
HEPI	37%	27%	11%	9%	4%	14%
Our sample	6%	31%	37%	26%	0%	0%

Figure 27 - Clarity of GenAI policy, HEPI comparison

Comment This question was taken from HEPI Policy Note 51, which demonstrates a notable difference in those who have 'Strongly agreed' with this statement (HEPI: 37% vs our sample: 6%). The HEPI sample may be more polarized overall, as 4% Disagreed strongly compared to 0% of our sample.

A good policy is generally also clear, but whether a policy is "clear" is not necessarily a measure of whether it is a good policy! To reiterate, both samples are from a student perspective and there may be a natural limit to the level at which any student could be expected to understand and give a fair assessment of the technical details of any university policy.

Note: The HEPI survey included an option for 'Don't know' while ours did not. We might assume that these respondents were more likely to select 'Neither agree or disagree'.



	Very satisfied	Quite satisfied	Neither satisfied nor dissatisfied	Not very satisfied	Not at all satisfied	Don't know
HEPI	6%	15%	40%	12%	5%	22%
Our sample	4%	24%	48%	19%	6%	0%

Figure 28 - Level of support around GenAI, HEPI comparison

Comment: Compared to the previous question, there seems to be a greater similarity between HEPI and our sample. Perhaps regardless of the clarity of policies, students feel relatively well supported in using these technologies. This view could change as time goes on and the technology presumably becomes both more prevalent and capable.

Note: As before, the HEPI survey included an option for 'Don't know' while ours did not.

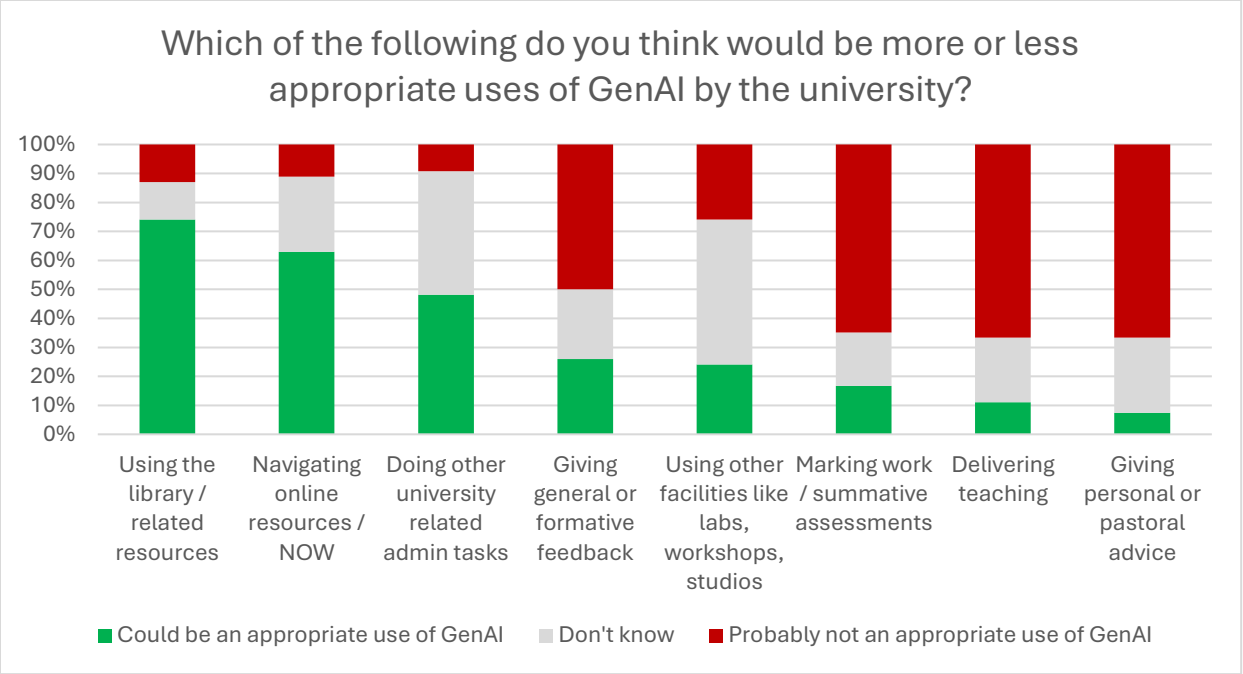


Figure 29 - Acceptability of GenAI in teaching and other uses

Comment: Relatively unsurprisingly, the more direct, personal and teaching elements of university are the least likely to be felt to be appropriate uses of GenAI. In the context of our particular sample, we might assume that the element of 'a human touch' in all aspects of the university experience can carry additional weight. Equally, a commonly stated objective of all assistive technologies is to increase independence, but at the very least we should not underestimate the amount of human support needed to make technological support truly 'stick'.

Category	Could be an appropriate use of GenAI %	Don't know %	Probably not an appropriate use of GenAI %
Using the library / related resources	74	13	13
Navigating online resources / NOW	63	26	11
Doing other university related admin tasks	48	43	9
Giving general or formative feedback	26	24	50
Using other facilities like labs, workshops, studios	24	50	26
Marking work / summative assessments	17	19	65
Delivering teaching	11	22	67
Giving personal or pastoral advice	7	26	67

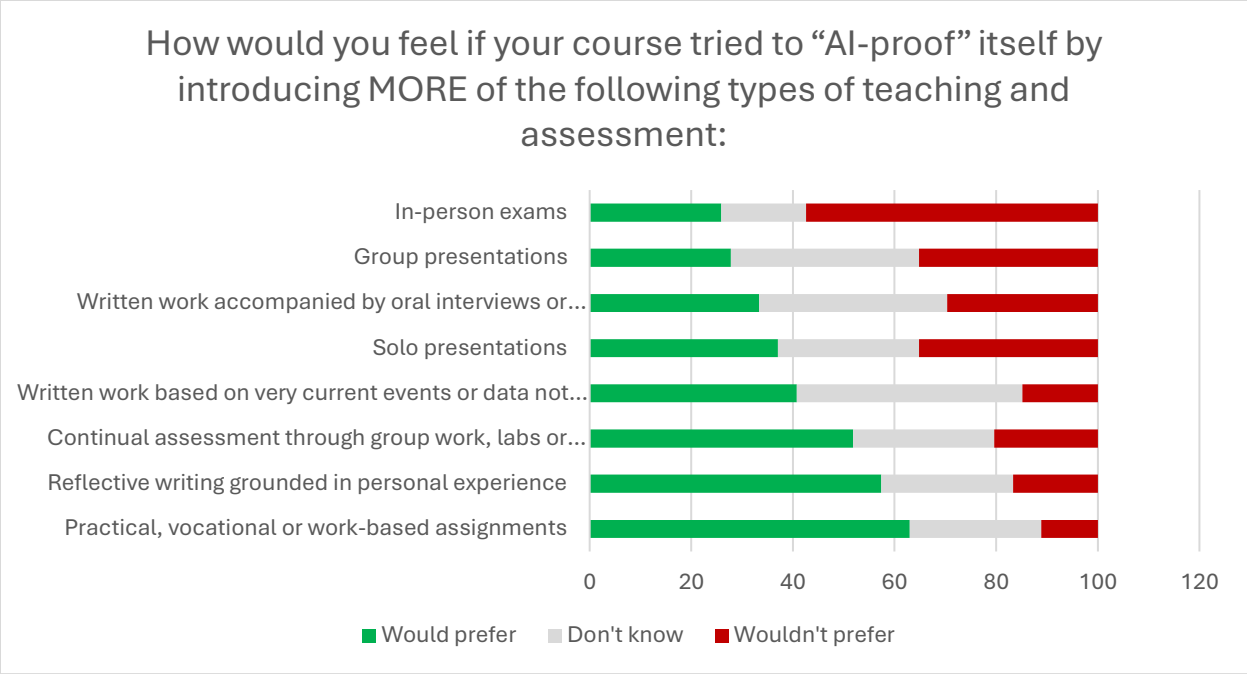


Figure 30 - Acceptability of 'AI-proof' assessment

Comment: Given the range of courses our sample draws from, it is likely that some assessment types are largely unheard of, or would be impractical to deliver, in some courses to begin with. While some adjustments to formal exams (25% extra time, use of a computer) are well established; as assessment types change, it is possible that while barriers are lowered for some students, without care, this may result in barriers being raised for others. Inclusive practice is a clear ambition towards addressing this, but there are clearly a great many variables and combinations to consider in terms of practically achieving this, while maintaining the integrity of assessment.

Category	Would prefer %	Don't know %	Wouldn't prefer %
Practical, vocational or work-based assignments	63	26	11
Reflective writing grounded in personal experience	57	26	17
Continual assessment through group work, labs or workshop participation	52	28	20
Written work based on very current events or data not generally accessible by GenAI	41	44	15
Solo presentations	37	28	35
Written work accompanied by oral interviews or presentations	33	37	30
Group presentations	28	37	35
In-person exams	26	17	57

Open question: "Are there any other technology-related areas that universities should invest in, that are MORE of a priority than GenAI?"

Category	Frequency	Example
NA/No/Not sure	35	"I'm not aware enough of such technologies to recommend anything"
Technology/Assistive technology	6	"Greater provision of quiet/private study spaces with accessibility software installed. More collaborative learning-ready rooms with laptop provision."
Concise/simplified information	4	"Concise way of obtaining information provided or stored by the university."
Timetabling/Room availability	3	"Timetables, to ensure that there no double-booking, and a system to reliantly tell when a room is occupied"
NOW/NTU App	2	"Having a more user-friendly and less convoluted NOW platform"
Interactive teaching	2	"Fine art workshops!!! Practical over digital making"
Not AI	2	"Anything, I believe AI is often used in the wrong ways"
Printing/books	1	"Removing printing fees, more books in online library"

Table 8 - Open comments on other technology-related issues

Comment: Many respondents could not think of other technology-related areas that universities could be investing in. The other themes emerging are not uncommon demands across many universities but reiterate the importance in getting the basics right, as well as moving to address a novel technology.

We can also note that some universities have moved towards providing a specific model of GenAI access across their campuses to staff and students, although this does not appear to have emerged as a key demand: possibly due to the seemingly broad array of free / freemium options already available.

Open question: "If you have any other concerns or ideas about accessibility in universities generally, that do not involve GenAI, please state below:"

Category	Frequency	Example
NA/Not sure	41	"Nope. I have no concerns."
Awareness of disability/neurodivergence	4	"Spread more awareness of neurodiversity" - "PLEASE do required workshops to teach TEACHERS and staff about neurodivergence and chronic conditions because oh my good god is there so much ignorance."
Course specific issue	4	"The way that a lot of the course is structured can be very difficult to engage with." - "Even in tutorials you can feel like you are being assessed instead of being able to have a discussion to improve learning
Other access issue	3	"Some of the lecturers do not put any text on their slideshows which is extremely difficult to follow for people with processing deficits"
Online resources	2	"Certain online resources are not very user-friendly"
Physical access	2	"Just general accessibility issues with wheelchairs. Sometimes it's difficult."

Table 9 - Open comments on other accessibility issues

Comment: It can be viewed as a general positive that many students did not report any further concerns about accessibility, although this was not the primary advertised reason for the survey and students have other channels and opportunities to raise concerns more directly.

Employment and future concerns

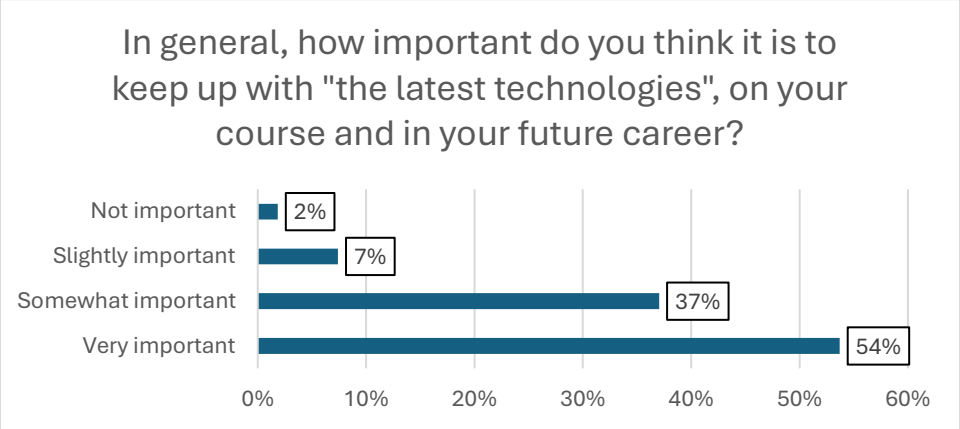
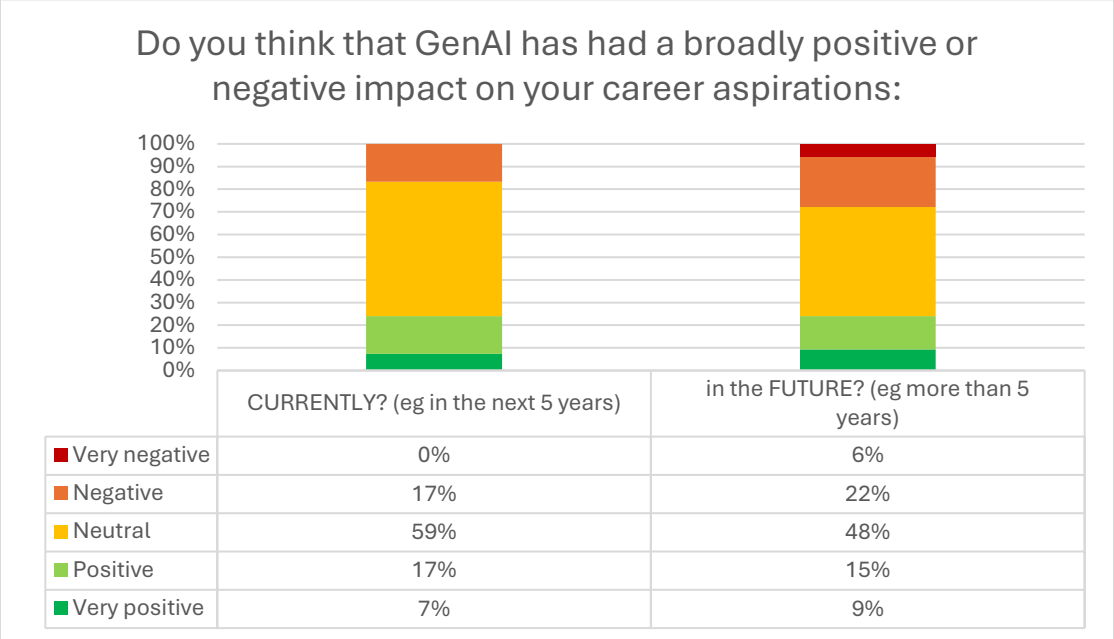


Figure 31 - Importance of new technologies to future career

Comment: Many respondents felt that 'the latest technologies' (of any description) were at least somewhat relevant to their future studies and careers. The HEPI poll previously referenced states that 73% of students expected to use AI after they finished their studies.



	CURRENTLY? (eg in the next 5 years)	in the FUTURE? (eg more than 5 years)
Very negative	0%	6%
Negative	17%	22%
Neutral	59%	48%
Positive	17%	15%
Very positive	7%	9%

Figure 32 - Impact of GenAI on career aspirations

Comment: It is interesting to note that the respondents were more pessimistic about the longer-term impact of GenAI on jobs, compared to the shorter-term; we can at least therefore assume that respondents think that GenAI will be likely to develop further. However, as with many previous questions, it is important to note that the bulk of responses are largely neutral.

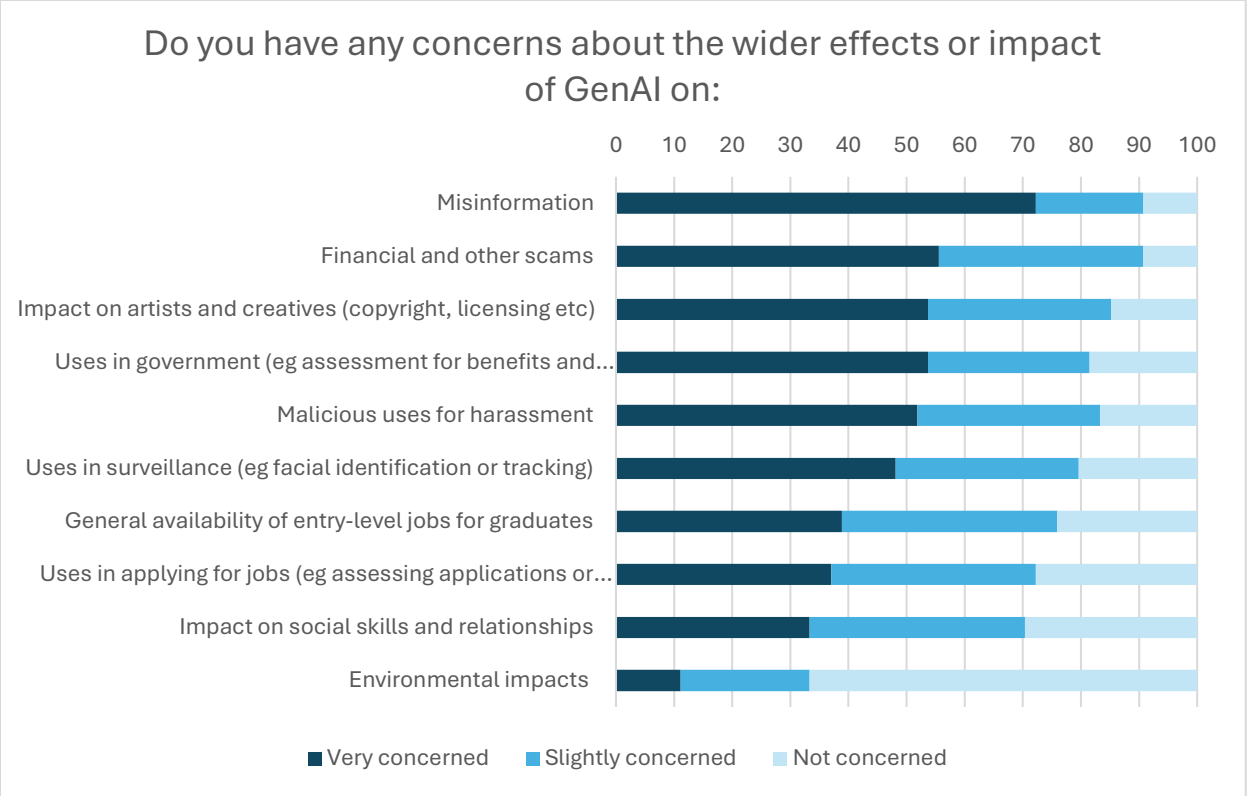


Figure 33 - Level of concern around other GenAI impacts

Comment: Our sample are clearly concerned about misinformation, which might evidence that some of the relevant teaching and support around GenAI (and critical thinking more generally) has been successful.

However more complex social and ethical issues, will likely require ongoing debate and discussion, across a range of topics:

On artists and copyright: *"i have used it when DALL-E came out for fun but now i would not use any gen ai for art even for fun because i fundamentally disagree with the art theft that takes place to train these art ais"*

On social skills: *"GenAI is not as helpful for the more social elements and professional development aspects [of] the course."* ... *"GenAI cannot make people more kind"*

On employment: *"...[more] employability resources...working typical jobs can often be difficult with neurodivergence and disability"*

Category	Very concerned %	Slightly concerned %	Not concerned %
Misinformation	72	19	9
Financial and other scams	56	35	9
Impact on artists and creatives (copyright, licensing etc)	54	31	15
Uses in government (eg assessment for benefits and other support)	54	28	19
Malicious uses for harassment	52	31	17
Uses in surveillance (eg facial identification or tracking)	48	31	20
General availability of entry-level jobs for graduates	39	37	24
Uses in applying for jobs (eg assessing applications or candidates)	37	35	28
Impact on social skills and relationships	33	37	30
Environmental impacts	11	22	67

Conclusions

This survey sheds light on the experiences of Dyslexic, Neurodivergent and Disabled students in NTU regarding a rapidly emerging and developing technology. Their usage and views of GenAI does seem to diverge slightly from other student surveys, but perhaps not as drastically as a 'techno-optimist' position would suggest. Inclusive practice takes many different forms across a range of courses, and the many uses (and prohibitions) of GenAI; by students or staff, is a highly complex picture to summarize. At the time of writing, even the students who have been the earliest adopters are unlikely to be able to fully reflect on how their whole university experience has been shaped by this technology. The subtle issues arising from other, previously novel, educational technologies should be thoroughly considered. Longitudinal research around many other educational technologies can be sparse: will GenAI be any different?

A key motivation for this project came from considering the text-manipulating functions in the context of Dyslexia-related support. While there certainly seems to be cause for cautious optimism here, there is also scepticism as to whether GenAI creates as much, or more work, than it saves. It may be that the effort it saves is valuable educational 'friction'. Is the work it creates less valuable than the work it saves? There is at least awareness that it creates new problems in the place of older and more familiar problems. The tools require new skills in managing verbose outputs, examining obtuse reasoning, evaluating different tools, prompts and so on. These skills may well be among the future skills that we want to equip students with, but it is also broadly speculated that GenAI could prompt greater demand for students with strong language, interpersonal and creative skills. These skills seem to help get more out of GenAI itself, but as technical and analytical aspects of various roles are increasingly automated, the critical importance of the 'human in the loop' will potentially increase in urgency.

The immediate headline alarms raised around GenAI focused on plagiarism and, in general, concerns that less care would go into the written word, or final product. However, as seen in our results, a more common use of GenAI (for all students) is likely in the earlier stages of assignments: explaining concepts, suggesting ideas and summarizing articles. It is telling that educational publishers like Chegg and Pearson were both financially shaken by the widescale emergence of GenAI, as students could now generate summaries of any text with ease. Without seeking to stigmatize time-poor and struggling students who can overly rely on summaries, templates and other shortcuts: additional scrutiny could be directed towards the impact of GenAI on the processes of learning, not just policing the final outputs.

Even what we might consider the more authentically useful applications of GenAI can get passed over by students who have well-established 'normal ways of working'. In the case of our sample, these ways of working can be highly individualized and sometimes viewed as idiosyncratic. Any blanket suggestions for change can be unhelpful and insensitive. Where students are openly encouraged or allowed to use GenAI, they may still worry that acknowledging its use will only serve to paint a 'target on their back'. Other students may fear that by avoiding GenAI, they are somehow missing an important advantage. Stigmatizing usage (or non-usage) is likely to further obscure the true picture. GenAI also has its own well acknowledged problem of bias, and Dyslexic, Neurodivergent and Disabled perspectives are no doubt also underrepresented in the training data underpinning them. We must not ask GenAI to 'smooth out' all the differences in our learners.

Although humans have been willing to project emotional intelligence onto computers since the early days of ELIZA in the 1960s, we do seem to be in truly uncharted territory for the automation of advice. This might be more accurately described as a form of technology-based, self-reflective practice, to avoid anthropomorphizing the technology any further. Overall, it is common for students seeking advice to report being overwhelmed; whether this is from keeping up with reading, frustration with their writing ability, understanding an assignment brief, juggling their deadlines, navigating significant life events and more besides. Likewise, it is common for professionals supporting these students to listen, clarify, regulate and scaffold academic tasks; and to provide further emotional and pastoral support besides. The challenge facing these professionals today is not one of quickly opening the floodgates to even more information; but to patiently find their way to giving the 'right' advice, that is co-constructed somewhere in the space between both parties, to give advice that 'sticks'. Without care, the bottomless recycling and infinite variations presented by GenAI could risk adding to already pervasive feelings of overwhelm and alienation.

There are also clearly elements of GenAI that human advice or support could not possibly seek to replicate (instant 24/7 access, zero social pressure, "free"). The interest in educational and therapeutic chatbots will likely keep growing. Some students will seek to use technology with an aim of becoming radically independent; others will seek high levels of human support and many more will sit somewhere in between. There are always risks of cherry picking the best-case scenarios from technological or human support, and assuming these factors will apply homogenously across a diverse population. Sensitivity and clarity of policies, with 'the human touch' in all elements of the student lifecycle, clearly remain essential.

Recommendations

For Universities and Higher Education Institutions:

Clarity of AI policies would primarily allow practitioners to better advise students on appropriate uses of AI. It would also help open discussion on any disability-specific concerns that may arise from (either promoting or prohibiting) certain uses of AI.

Some current examples that are commonly broken down into clear tiers or stages:

University of Leeds	3 levels: Can't be used, Can be used assistively, Is an integral part of assessment
University College London	3 levels: Can't be used, Can be used assistively, Is an integral part of assessment
Kings College London	4/5 levels: Minimal, Limited/Selective, Open, Embedded
AI Assessment Scale Furze et al. (2024)	5 levels: No AI, Idea generation and structuring, AI-assisted editing, AI-completion with Human evaluation, Full AI

It will be necessary for courses to retain individual control over the final details, however some higher-level guidance across the whole institution would be a great help to all of those who help support students at different stages: the student union, library and information staff, not to mention the informal networks of support (family, friends) that many students turn to. Disability practitioners often have to carefully negotiate academic requirements of courses with the unique profile of an individual student. In the case of DSA support, this can also involve individuals working outside of the university structure.

It is easy for AI to potentially take focus from other, more basic access related issues that disabled students care about. Timetabling and provision of suitable study and/or private spaces are aspects that impact on all students but may have a disproportionate impact on disabled students. Consistency of lecture recordings and providing materials in advance, the general organization/user friendliness of online resources, university apps and so on, should all continue to be emphasized. The establishment of a disabled students' panel at a university level could provide direct input to new proposals and regular auditing of existing access provisions.

Universities commonly provide some level of assistive technology outside of that funded by the DSA. It may be valuable to consider the existing usage, return on investment and impact of existing technologies to see what lessons can be learned from their roll out and adoption.

For Disability practitioners and Academic tutors

Disability practitioners are, broadly, quite familiar with the concept of assistive technology and, given their close working relationships with students, can often encounter novel applications of both existing and newer technologies. In the most optimistic light, we might hope that appropriate use of GenAI can be focused on lower-level concerns (broadly defined), thereby allowing practitioners and students to focus 'human support' on higher-level concerns.

We should question how fully any lower-level concerns are resolved by technology alone. Spelling and grammar checkers have been readily available to all, for decades; calculators for even longer, yet we could not claim to live in a world without avoidable typos and maths mistakes. Debates as to how strictly academic written work should be scrutinized for 'form over meaning' are also likely to continue. Should we view language as some kind of engineering problem that can be 'solved'? We should also consider how lower-level tasks like searching, summarizing, discussing and forming arguments contribute to the overall formation of student and academic identity. To help establish trust, academics should also consider transparently communicating their own uses (or avoidance) of GenAI when regarding teaching, assessment and academic life in general.

While this study has focused on the perspectives of students, as many have proposed, there may be potential for utilizing GenAI to free up the time of staff to enable more 'human support' to be available. Deciding which day to day administrative headaches can be happily automated away versus those that need to retain a 'human in the loop' will be an ongoing challenge; as will the 'increased productivity = increased workload' dilemma articulated by Watermeyer et. al in 'Generative AI and the Automating of Academia' (2023). Some basic advice chatbots have already been trialed at NTU for basic employability, graduation and staff queries (These are similar but not strictly comparable to GenAI as discussed here).

Disability and inclusion departments process large quantities of highly sensitive personal data. The EU AI Act categorizes Education as a 'high-risk' application of GenAI, as the underlying biases in LLMs are likely to disproportionately harm disabled students and may further embed inequality. Specialist vendors of GenAI-based tools, may claim, in coming years, to be able to process this data faster or unearth new insights from it. The privacy concerns regarding this kind of usage are hopefully clear and should be treated with the highest levels of scrutiny. The 'Algorithmic Transparency Reporting Standard' is one example of how public-sector organizations can take a more open approach to the increasing quantities of data they collect and make decisions with.

Appendix A: Other surveys reviewed

28 sources were reviewed in relation to student surveys on Generative AI and higher education.

11 were general polls and grey literature, 17 were from academic journals; although some were pre-print, technical reports or conference proceedings.

The general polls and grey literature were collected through following the developing topic across various news sources, aggregators and social media (Times Higher Education, The Conversation, Google News, LinkedIn, ResearchGate).

The academic journals were sourced through searches of Google Scholar, Scopus and Web of Science using the keywords: “student survey generative AI”.

Of all the sources, only three made any reference to disability (*starred below) and none referred to dyslexia. Of the three that mentioned disability in the text, these were only cursory mentions and did not investigate the topic in any great amount of detail. The surveys used appeared to collect some demographic data (gender, age etc) although none of these seemed to extend this to include questions on disability or dyslexia.

All of the publications here were from 2023. A variety of countries were represented in the sample, though mostly from Europe and the US. This brief review was carried out between January-February 2024 and no doubt more literature has emerged since then.

1. **General polls and grey literature (11)**

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Kingston University & YouGov, 2023, Future Skills: The Kingston Approach, Kingston University, Available online: https://d68b3152cf5d08c2f050-97c828cc9502c69ac5af7576c62d48d6.ssl.cf3.rackcdn.com/documents/user-upload/kingston-university-83c0c7036df-kingstonreportv20digital-final-.pdf

2. **Journal papers (17)**

Chan, C.K.Y., Hu, W. 2023. Students' voices on generative AI: perceptions, benefits, and challenges in higher education. Int J Educ Technol High Educ 20, 43. https://doi.org/10.1186/s41239-023-00411-8

(*) Smolansky, A. et al. 2023. Educator and Student Perspectives on the Impact of Generative AI on Assessments in Higher Education. In Proceedings of the Tenth ACM Conference on Learning @ Scale (L@S '23). Association for Computing Machinery, New York, NY, USA, 378–382. https://doi.org/10.1145/3573051.3596191

Amani, S. et al., 2023, Generative AI Perceptions: A Survey to Measure the Perceptions of Faculty, Staff, and Students on Generative AI Tools in Academia. Texas A&M University technical report. https://doi.org/10.48550/arXiv.2304.14415

(*) Kelly, A., Sullivan, M., & Strampel, K. (2023). Generative artificial intelligence: University student awareness, experience, and confidence in use across disciplines. Journal of University Teaching & Learning Practice, 20(6), 12. https://doi.org/10.53761/1.20.6.12

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