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Enhancing Inclusive Education Through AI: Supporting Neurodivergent Students and Staff in UK Higher Education

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ABSTRACT

Increasing numbers of students and staff in Higher Education (HE) identify as being neurodivergent. Neurodivergent individuals are often disproportionately impacted by considerable executive functioning demands in HE (e.g. planning, task initiation), resulting in cognitive overload, poor-decision making, emotional dysregulation, and stress. Artificial Intelligence (AI) tools may offer opportunities to mitigate some of the executive functioning challenges by supporting cognitive scaffolding to execute tasks in an accessible way. In a mixed methods study we explored AI tools' potential to support cognitive and executive functioning demanded in HE, by asking neurodivergent staff and students (n = 56) which AI tools they are currently using, and for what purposes. We analysed findings using the BRIEF model of executive functioning, finding that AI tools can function as forms of cognitive support for individuals experiencing executive dysfunction. We argue that such technologies may help address gaps where existing institutional resources and educational practices are insufficient to support equitable participation and success. However, while AI tools offer potential to support neurodivergent academics, the longer-term impacts of AI use are unknown. We therefore discuss potential caveats to consider when recommending use of these tools to neurodivergent academics.

KEYWORDS artificial intelligence (AI), higher education, neurodiversity, accessibility, executive function

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Introduction

The emergence of Generative Artificial Intelligence (GenAI) with chat-like interfaces (e.g. ChatGPT, Claude, Gemini) have had extensive societal impacts, prompting wide-ranging change in Higher Education (HE). While AI tools were already being used to automate tasks such as transcription, they often needed extensive editing and correction. GenAI tools introduced Large Language Model (LLM) capabilities of generating content with unique semantic structure but based on known human knowledge and language. In HE, initial attention on AI focused on existential concerns of the future of universities, mostly centred on assessment integrity and the importance of critical engagement with AI tools [1]. Learning and teaching concerns are grounded in evidence from Higher Education Policy Institute (HEPI) surveys that

have documented a rapid behavioural shift, with students' reported use of GenAI rising from 66% in 2024 to 95% in 2026[2]. One of the institutional responses to these concerns, according to HEPI, has been the return to in-person exams as a means of containing "threat".

During assessments, under the UK Equality Act 2010, reasonable adjustments in the form of individualised support must be provided for students with a disability, to allow for equitable participation. Neurodivergent students are eligible for reasonable adjustments. Doyle [3] estimates 15–20% of the adult population has a neurodevelopmental condition (such as autism, ADHD, and dyslexia). Apperly et al. [4] found 12.97% of participants reported a self-diagnosed neurodevelopmental condition, with only 3.23% reporting a formal diagnosis. Furthermore, in 2022 out of 2,038 prospective UK undergraduates, 14.2% considered themselves to have ADHD, autism, or both [5]. In comparison, for UK HE staff, data from 2024–2025 shows a disclosure rate of ~2.3% neurodiversity related disability (~5,600 academics) [6]. Overall, these figures likely underestimate the population of neurodivergent students and staff in HE (hereafter shortened to neurodivergent academics), due to disclosure barriers such as fear of being perceived less capable than neurotypical peers, and negative prior experiences with disclosure, particularly when belonging to a minoritised cultural group [7], [8].

With large class sizes and increasingly diverse learner needs, large-scale provision of adequate support is an ongoing challenge, especially in a context of rising concerns about staff workload and wellbeing [9]. Thus incorporating AI tool use in HE can potentially support teaching and learning by improving productivity and providing individualised support for students and staff [10].

Many tasks required of individuals in HE are in high demand, yet are carried out with limited support; deadlines are commonly clustered around end-of-semester bottlenecks, requiring students and staff to juggle multiple cognitively-demanding priorities with little interim structure and fast turnarounds [11]. Resultantly, while neurodivergent and neurotypical academics alike can thrive and struggle within HE, neurodivergent individuals may be disproportionately impacted due to differences in executive functioning.

Executive function (EF) is broadly defined as the topdown, effortful cognitive control processes that support goal-directed behaviour [12]. Miyake et al. [13] divided EF into three positively correlated and distinct components: shifting, updating, and inhibiting. EF abilities have been found to rapidly develop during childhood, adolescence, and culminate in emerging adulthood [14]. EF abilities play a consequential, if invisible, role in daily activities; from switching between multiple responsibilities, planning your commute, exercising self-control like modulating one's response to a hurtful email, and for finding solutions to new problems [12]. Greater EF ability has been consistently associated with positive outcomes, like academic attainment in HE [15], and the development of social interaction skills [16].

However, it is important to caveat that EF literature has historically been framed from an implicitly normative framework, where deviations from the typically expected (i.e. neurotypical) neurodevelopmental trajectories are framed as deficits, thus failing to acknowledge the extent to which barriers arise from insufficient accommodation of natural neurotype variation. This is reflected in the language used. For example, literature referring to attentional difficulties rather than attentional differences, or using the term executive dysfunction, rather than executive variation. Taking a more strengths-based approach, Rafael et al. [17] conducted a scoping review of ADHD-related strengths in adults. Their results support a reframing of deficit-based language, demonstrating that characteristics ordinarily described as symptoms can function as strengths in particular contexts. For instance, in ADHD impulsivity can sometimes be interpreted as adaptive risk-taking, which can be an asset in competitive or entrepreneurial settings. Similarly, reframing inattention as interest-based attention may help explain why, in high interest conditions, individuals can "hyperfocus" and may sustain attention for longer, work productively under pressure, and draw on greater intrinsic motivation as a result, than when interest is low.

Supporting a strengths-based approach, Chow and Cooper [18] synthesised 26 qualitative studies and found that autistic participants embraced an autistic identity and being "wired differently", experiencing special interests as enriching to their lives. The participants identified strengths that helped them thrive in daily tasks (e.g. making processes more efficient), enhance their performance at work, get more out of the activities they enjoyed, or to help others, with recognition of those skills by others contributing to feeling valued. This reframing does not demerit the genuine struggle that arises from a mismatch between individual needs and environmental/task design. From this position, the difficulties neurodivergent academics face arises principally as an institutional design flaw rather than from inherent individual deficit [19]. Thus overall, recognising strengths allows for a more representative and inclusive reframing of neurodiversity that can help with better provision of support to neurodivergent academics.

Neurodivergent academics can be attracted to academia since it is a space that favours creativity, problem-solving, curiosity, exploration, divergent thinking and in-depth research on specific topics, in alignment with strengths that come with certain neurotypes [11], [17]. However, HE can also have hidden expectations and rigid boundaries that are often built on neurotypical expectations [20]. For example, HE often requires constant switching between tasks, whether that is to teach or to study, given "there's a lot to juggle" p. 825 [11]. For certain neurotypes, such as academics with ADHD, individuals may enjoy having options that provide a constant and varied degree of interest and problem-solving opportunity [17]. However other neurotypes, such as autistic academics, reported finding prioritising between multiple competing tasks or separating the details from the bigger picture less enjoyable and more energy consuming [21]. Similarly, lived experience work from neurodivergent academics highlights a constant feeling of taking longer to achieve similar results to peers, leading to feelings of heightened anxiety, task-paralysis, and imposter syndrome [22].

Furthermore, heightened rejection sensitivity among individuals with ADHD [23] may mean routine feedback is more readily experienced as personal criticism. Thus, the anticipation of criticism can trigger a cycle of avoidance that compounds the original difficulty. This can be true of both students handling feedback from lecturers and peers, but also for staff handling feedback from students, colleagues, and managers. These experiences matter in terms of how support is designed. Interventions must provide holistic support that addresses not just the task demand, but also account for the affective needs of the individuals, their

neurotype, and broader intersectional contexts the individual sits in.

GenAI can potentially be used as a scaffolding tool for EF. Zhao et al. [24] explored how students with disabilities in UK universities were using GenAI tools, with the most reported disability being "neurodiversity-related". The students reported using more versatile chatbots like ChatGPT, or proofreading and translation tools. Notably, as Psychology researchers, we noticed that the tasks participants reported tools performed well for in this sample were EF related. For example, clarifying objectives, providing initial structure, breaking down large tasks into manageable steps, and supporting engagement with lengthy or complex tasks. The student participants in the Zhao et al. study also talked about how tools helped them overcome struggles directly related to their disability, as well as others that are product of a disabling environment. For example, anxiety reduction when using GenAI for emotionally challenging tasks. The students also reported a desire to be more involved with University AI policy and AI literacy around ethical use, fair access and disability support use.

These AI tools can provide tailored and personalised support harnessing individual strengths, while targeting challenges for the individual and their environment [25]. In addition, these AI tools are immediately available and accessible, in part due to being increasingly embedded within technology, and their use does not require a diagnosis or even a disclosure of challenges experienced.

Our study aims to centre the lived experiences of neurodivergent academics in order to understand how they are engaging with AI tools, for both academic and nonacademic tasks. Our team consists of HE staff and students, where we co-designed our study, to bring insider perspective to the two main aspects of UK HE. The study was also designed considering some of the team's lived experience of neurodivergence. Although we acknowledge that singular views cannot be assumed as generalisation, our study still provides a dialogue between neurodivergent and neurotypical views of UK HE.

We aimed to explore staff and students' uses and attitudes towards AI tools using a mixed-methods design via an online survey. In the current paper, we focus on the quantitative analysis of familiarity with AI tools, frequency of use and type of tasks for which the tools were used, and interpret findings through an executive functioning lens.

Methods or analytical approach

Participants

Fifty-six neurodivergent (either formally diagnosed or self-diagnosed) UK staff and students who use AI tools participated in an anonymous online survey. Participants were recruited via opportunity and convenience sampling.
From 83 responses received, 61 were from participants who consented to take part and finished the full survey. Given that this data was part of a bigger project, open text responses were also screened for being AI generated using a two-reviewer procedure. Two researchers independently reviewed each response against a set of predefined red flags (e. g. use of bullet points), and responses were flagged for removal only when both reviewers agreed. Five participants were removed for this reason. The final sample of 56 participants (Female = 38; Male = 17; Non-binary = 1) were aged 18 to 60 years (M age = 28.6 years; SD age = 9.1 years), and consisted mainly of White (n = 34) and Black (n = 15) ethnic backgrounds. The majority (n = 46) of participants reported they were a student in HE. Table I shows the range of neurotypes disclosed, the three most commonly mentioned were: ADHD (n = 31), Autism (n = 20), and Dyslexia (n = 11); although these would often overlap given natural co-occurrences.

Measures

AI Tools List

We created a list capturing as many AI tools as practically possible that were available in the last quarter of 2024 and start of 2025, with a total of 25 tools identified. AI Tools were defined as software, webpages or apps that self-described as AI powered and that could be relevant for research (e.g. Elicit or Research Rabbit), academic productivity (this included tools like Grammarly, Canva AI, Research Rabbit or GenAI such as ChatGPT or Gemini), or tools that were aimed at neurodivergent individuals (e.g. goblin.tools).

Online Survey

We developed an online survey to capture how neurodivergent staff and students had been using AI tools. It was divided into three parts: Part One included items aimed at capturing how staff and students currently used and would like to use AI tools. The full list of AI tool names was presented here to ask participants about their previous knowledge and frequency of using these tools. This section of the survey aimed to capture the participant's use of AI tools in both academic and non-academic settings as part of the exploratory mapping of use.

Table 1. A count of neurotypes disclosed by participants

Neurotype[a]	n
ADHD	31
Autism	20
Dyslexia	11
OCD	5
Dyspraxia	2
Anxiety	1
Mood (unspecified)	1
Synaesthesia	1

Note. Whilst this table counts neurotypes individually, some participants disclosed multiple co-occurring neurotypes e.g. ADHD, Autism, and Dyslexia.

Part Two consisted of open-ended questions designed to capture qualitative data on the participants' perceived benefits and challenges of using AI tools, with a particular focus on their neurodivergence. In Part Three we asked participants for demographic information; including gender, age, position at their university, neurodivergent status, and ethnicity.

See supplementary materials (https://osf.io/h38rb/) for a copy of the survey, the AI tools list resource, and additional demographics information.

Data Collection

The University of Glasgow College of Medical, Veterinary and Life Sciences Ethics Committee provided ethical approval. Participants' informed consent was sought from the start, and any participation that was left unfinished was considered a voluntary withdrawal of the study and was not included in the analysis. Participation was anonymous. Email addresses for

a follow-up study were collected separately and not linked with any research data at any time.

Data collection occurred between 23 January 2025 and 15 April 2025. Upon accessing the survey and answering pre-screening questions, participants were presented with the Participant Information Sheet, Privacy Notice, and the Consent Form. After consent, they accessed Parts One of the survey. At the end, participants could also voluntarily provide an e-mail address if they wanted to take part in follow-up interviews and future research projects.

Reflexivity

The research team brought varied positionalities to the study: ARR, a queer immigrant researcher with ADHD and ND expertise, used an intersectional, decolonial lens to inform design and interpretation; SS, a neurotypical cognitive psychologist new to sustained AI use, took an exploratory stance and anchored interpretation in participants' own language via a reflexive diary; SE brought a critical realist and critical feminist positionality to the quantitative analysis, managed through collaborative team review; JB, without lived ND experience but with close ND relationships and growing AI familiarity, saw their interpretation evolve alongside this knowledge; and HP, from a neurodivergent family with extensive AI expertise, contributed established community-of-practice knowledge. Team discussion throughout analysis helped preserve diverse perspectives and avoid a homogenous interpretation of the data.

Results and findings

Pre-processing

Any identifiable or personal data revealed within the open text answers was redacted or removed from the data to avoid identification. Data was stored in a GDPR compliant server. Data wrangling, cleaning, visualising and quantitative and qualitative analyses were conducted in R v.4.6.0 [26] using mainly tidyverse v.2.0.0 [27]. Find additional details in the supplementary materials. Descriptive statistics were calculated for the demographic questions, and across the survey items, such as, participant usage of AI tools.

Tool use

We wanted to see how familiar participants were with the 25 AI tools we showed them, and whether use changed depending on their academic use, non-academic use, and which tools might be more familiar despite not being as used.

For our 56 neurodivergent participants, GenAI tools like LLMs and Generative Pre-trained Transformers (GPTs) were reported as the most used in both academic and non-academic tasks.

The most used tools were ChatGPT (n = 52) and Grammarly (n = 40). Grammarly was a pre-existing product with a web browser plug-in, and was later embedded with LLM abilities, an example of the increasing incorporation of LLMs into existing products marketed as writing support. In comparison, GenAI tools like ChatGPT do not constrain or limit the kinds of tasks a person can perform with it. We also looked at tools that participants had heard about, but not used and the top ones were Gemini (n = 22) and Copilot (n = 17).

Fig. 1 shows the most used AI tools and those that were known, but not used.

For only academic use, Grammarly was the most used tool, but overall, the most used tools can be categorised under GenAI chatbots (i.e. Copilot, Gemini or ChatGPT), proofreading/editing (e.g. Grammarly or Pro-Writing Aid), organiser and planner (i.e. Notion) or research search engines (e.g. Research Rabbit). Overall, there were similar patterns of AI tools usage for non-academic and/or academic AI tool use, with GenAI or well-known AI tools as the most popular, suggesting that for the time (early 2025), participant exposure to the AI tools may have determined usage.

Regarding frequency, AI tools were most commonly used daily or more for academic use (n=7), closely followed by 2–3 times a week as most common use (n=6). For non academic use, the AI tools were most commonly used 2–3 times a week (n=6). Overall leaning towards more frequent use, if used rather than used sparely. This suggests that for the participants that do use AI tools, it is a part of their academic and non-academic routines.

AI Use per Task

In the open-ended questions, participants identified using AI tools for a variety of tasks. Tasks were grouped based on semantic similarity. We then used a deductive theoretical approach based on the EF domain these tasks could be supplementing, using the three-factor and nine subscale model of the Behavior Rating Inventory of Executive Function (BRIEF) [28] and using the names proposed by CFA replication by Little et al, [29], which evaluates and facilitates the mapping of EF onto daily tasks. We uploaded the BRIEF coding framework and prompted Claude (Sonnet 5) to assign each response to the most appropriate category within that framework. Members of the research team then reviewed every response alongside its assigned category and moved responses to a different category if the initial assignment did not fit after expert consideration. Tasks were further refined based on our lived experience as academics in HE. Some tasks were categorised in more than one domain when task was too broad and could encompass multiple processes, while other tasks could rely on multiple EF processes, but these were allocated to the process that most likely leads the specific task. The final categorisation therefore reflects the research team's judgement, with the AI-generated categorisation serving as a first pass. We used AI to initiate this task given that the categorisation was deductive and descriptive, involving grouping by surface meaning and allocation to predefined categories, which AI has been shown to perform well [30]. Furthermore, given the study's focus on how neurodivergent people use AI as a cognitive scaffold, we considered it appropriate to reflect transparently on our own use of these tools in the research process.

The BRIEF framework showed that the majority of tasks were being used to support executive self-regulation. The metacognitive domain shows a dominance on the processes being used through AI tools, reflecting the "executive" self-regulation. Meta-cognitive support was the most reported, where AI is being used to "jump-start" a task rather than sustain it. Secondly, working memory highlights how AI seems to be used as an external "second brain" for "thoughts, research aims, arguments", while evaluating and bringing together other information.

Planning and organisation suggest that structuring can help place things in perspective as well as provide a blueprint that can then make initiating tasks less overwhelming. Task-monitoring reflects the high-attention to detail that is required

within an academic environment, from attention to citation formats. Table 2 shows the tasks allocated per EF domain and some examples from the data.

The categories comprised both academic tasks (e.g. reference search) and non-academic tasks (e.g. recipe ideas).

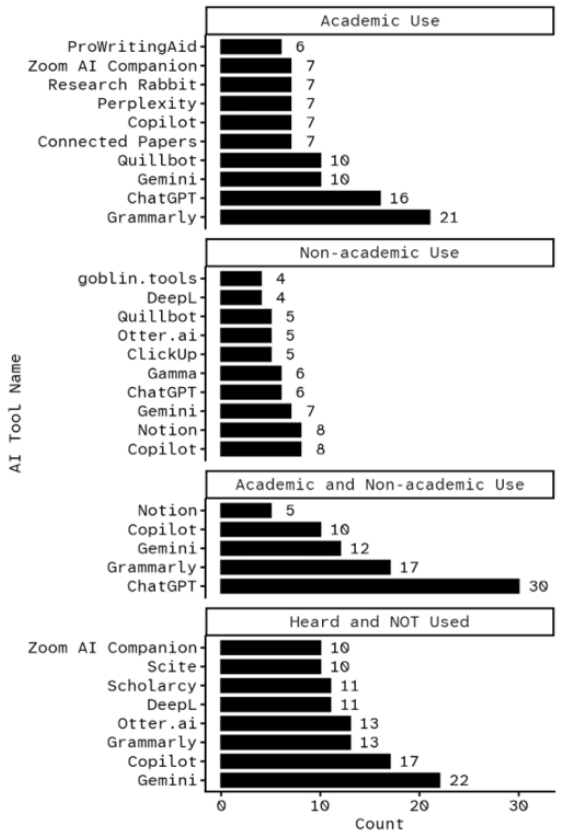


Fig. 1. Most Frequently Used AI Tools for Academic and/or Non-Academic Purposes by frequency. The Top Five AI Tools by Use Type, Tied Ranking Allowed.

The remaining identified tasks were allocated to the closest underlying process or task function unrelated to EF, showing four categories:

- *Creative Thinking*—Tasks in this category were mostly used for creating images, content and storytelling that are not associated with self-regulatory control.
- *Conceptual Explanation and Learning Support*—Tasks in this category were for when AI tools are used as tutors for clarification, knowledge retrieval and new information over planning.
- *Information Seeking and Curiosity*—Tasks in this category were hypothetical questions and for use instead of as a quicker search engine.
- *Tailored Recommendations*—Tasks in this category highlighted the personalised suggestions that save an individual time from searching multiple sources of information.

Finally, there was a category for unspecified tasks where the task description was too vague, to be able to be categorised without knowing the underlying rationale of why the participant had mentioned it or how AI was being used to support that task (e.g. 'project' or 'to do tasks').

Discussion

Our study set out to explore how neurodivergent academics—staff and students in UK HE—use AI tools in both academic and everyday contexts and identify what can be learned for neurodivergent-specific use of AI Tools through an executive function lens. We found that participants were familiar with a range of AI tools, including some that they had not used. We suggest the familiarity-use gap may be due to the need for neurodivergent people, like others with non-visible disabilities, to self-source their own solutions in order to meet demand needs of neurotypical environments, which may prompt finding tools that are not subsequently used [31]. Alternatively, the breadth of familiarity may reflect a high interest in technology and in making processes more efficient, often a self-identified strength in neurodivergent individuals [11], [18].

GenAI chatbots, particularly ChatGPT, were the most commonly used AI tools in both academic and non-academic settings. This may reflect both their familiarity and versatility across multiple tasks. GenAI popularity is unsurprising given the natural language interface providing intuitive interaction, along with public attention at their launch.

Boubker [32] found that perceived usefulness, ease of use and social influence all predicted students' adaptation of ChatGPT. Furthermore, Labadze et al., [33]'s review of 67 studies found that AI chatbots can be particularly helpful for learners and educators since they offer immediate and personalised assistance based on individual's unique needs and preferences, which can also be reflected in the type of tasks reported by our participants.

By comparison, tools specifically developed for neurodivergent people (e.g. goblin.tools), which scaffold support according to level of need, were used less often by our participants in 2025, despite being the target users for these tools. One reason could be the open-source community-driven approach behind these tools, and having not been embedded in everyday technology, potentially diminishing word-of-mouth impact. Adoption may therefore depend on how long a tool has been available, and how widely it is promoted, as well as how much it meets users' needs.

Another reason GenAI chatbots may be used by neurodivergent academics could be that they accommodate unstructured input: thinking does not need to be organised or precisely worded, and instructions can be clarified iteratively based on outputs. This may support thinking-aloud processes, akin to the "rubber duck" effect, where the thinking and understanding happens as a result of the perceived interaction with another. Externalising thought in this way makes the content of one's thinking available for inspection, drawing on meta-cognition—the monitoring, regulation and organization of one's own thinking [34].

The BRIEF-framed analysis of our tasks also reflected that holding and manipulating information through working memory was one of the main uses of AI tools given the broad range of tasks mapped to it. GenAI might be experienced as particularly helpful for students with ADHD to support their metacognitive skills as it can provide them with an external thinking "sandpit" to output their internal information and they can examine it without relying on memory alone—a process supported by working memory [35]. The tasks participants most commonly used AI for were broadly similar to those reported in previous research of AI use in HE [36].

Table 2. Mapping neurodivergent ai task use to executive function

EF Factor & Process	Definition	Example Quotes
Behaviour Regulation Inhibit	Control impulses; stop a behaviour at the appropriate time. Filtering irrelevant information	Summarising notes/articles /papers/notes/book; condensing text; ask for summaries of advice (instead of going through blogs, reddit etc); collating information
Behaviour Regulation Self-Monitor	Awareness of how one's own communication affects others.	editing email communication (to tone down its abruptness); checking the tone of a text or email & how to response appropriately; professional sounding emails and letters; appropriate ways to relate with people
Emotional Regulation Shift and Flexibility	Move flexibly between situations, ideas, or frames of reference. Consider reader writer perspective	Advice on friendships and relationships; casual conversations; writing application letters, CVs, cover letters; translating text into English; coming with responses to people I am communicating with.
Emotional Regulation Emotional Control	Modulate emotional responses appropriately.	seeking moral support; as a friend; times when I needed support but it was 'quicker' to use ai; counselling
Meta-cognition Working Memory	Hold and manipulate information in mind to complete a task.	Research; writing essays/ reports/paragraphs; finding papers for research; drafting letters / proposals/ template; simplifying text I do not understand; note-taking; rewording: feedback, unclear sentences, things, sentences; rewriting things so they're simpler
Meta-cognition Initiate	Begin a task or generate output independently.	Drafting email / assisting me form emails; brainstorming; content generation or ideas; social media posts; blogging & article writing / travel blog writing / newsletter writing; help writing/responding texts; Using it more so as a different Google or baseline starting point; for generating text; writing sections of papers; ideas for writing CVs, job interviews, linkedin etc; give me some ideas on some of my project stuff; drafting possible research project ideas; ideas / idea generation / idea formation; ideas on how to make tables
Meta-cognition Plan	Anticipate future needs; set goals; sequence steps toward them.	time management; planning; scheduling meetings and classes; planning projects or essays; creating a plan for work I will complete; creating dissertation timeline planning long runs; breaking down to lists as small as possible & giving the expected time each task will take to do (time estimation); preparing research drafting proposals; dissertation help; possible essay structure for one assignment. Study support; help with paragraph structure; present idea; shopping list and recipe creating; writing code / coding / help with coding (R and Python); predict potential risks in my business
Meta-cognition Organisation	Keep tasks, records, or spaces structured and orderly.	daily diaries, creating routines, flow of my work, organising workload, helping me write to do lists, ask to break down large tasks, breaking things down so they're easy to understand, making budgets, making invoices, flashcard making, breaking down the points of a research paper to help processing; data analysis
Meta-cognition Task-Monitor	Check one's own work during or after completion to catch errors.	Proofreading; spellchecking; editing; checking documents; punctuation; editing work i have written myself to check for grammar mistakes; forming citations; help with r studio code and errors, programming problems, finding synonyms

However, the underlying reasons for using these tools may be unique to a neurodivergent population, relating to their particular strengths and challenges surrounding EF, a unique strength of using an EF framework to ground their AI use. Our BRIEF-framed analysis showed that AI tools were mostly used to scaffold metacognitive processes to support self-regulation of task execution: starting, holding, sequencing and revising work. Initiation, Planning and Organisation were some of the most frequently mentioned processes, suggesting that participants used AI to help close the gap between intention and action.

For example, participants described using AI tools to create to-do lists, prioritise tasks, or begin projects by asking general questions or finding references. Executive functions have been shown to moderate the intention behaviour link, with those higher in EF more likely to act on their intentions [40]. Generative AI tools may therefore support people in translating intentions into action by taking on some of the executive demands involved. We tentatively suggest that this represents a form of cognitive offloading of EF.

Tools that generate instructions, organise material and suggest decisions may therefore prompt movement from intention to action and may support the reduction of task inertia or choice-paralysis, a phenomenon experienced as an inability to initiate a task when multiple competing demands are associated with similar estimated priorities [37]. Neurodivergent staff and students reported GenAI use to support processes which they have mentioned can be one of the challenges of academia such as juggling multiple responsibilities [11] or estimating the appropriate time for a task. Similarly, tasks which AI tools were frequently used included proofreading (e.g. using Grammarly) and support with coding. These tasks require sustained high attention-to -detail, which may be effortful for some neurotypes, particularly for those with dyslexia or ADHD. Interestingly, some of the tasks that were not part of the BRIEF mapping, such as creative thinking, divergent-thinking or curiosity-driven questions reflect well some of the highlighted strengths that have been reported by neurodivergent individuals as well as by their peers [38].

Although fewer tasks mapped onto emotional regulation, this component likely interacts with cognitive and behaviour regulation, governing emotional control, motivation and perspective-taking. Monitoring tone in a message, and evaluating social situations to compose a "neutral" tone are tasks that can carry considerable emotional weight for neurodivergent people, particularly given heightened rejection sensitivity [23] along with struggles around double-empathy tension increasing the uncertainty of how message will be received [11]. We suggest that communication-oriented uses may involve offloading emotional risk: participants may use AI tools to seek clarification without the social cost or exposure to rejection, a risk that may feel greater given that neurodivergent people are more likely to have experienced social rejection in the past [23]. GenAI chatbots may thus offer a form of psychological safety, in which neurodivergent individuals need to self-monitor less, whether in their choice of language, the order and clarity of their ideas, or the emotional response associated with asking questions. In this sense, we suggest these "private" digital spaces could become safe havens for some neurodivergent individuals. We are currently exploring this possibility with follow-up research.

Framing EF in terms of the fit between a person's profile and the demands of their environment shifts focus towards what can be changed outside of the individual: how tasks are structured, how expectations are communicated, what "hidden" implicit steps are needed within a task, and how much unsupported executive load an environment assumes its users can carry. The adjustments process illustrates this Sisyphean task: securing support is itself an executively demanding, self-directed, multi-step task [39] that assumes a constant neurotypical functioning capacity. Thus, just like Sisyphus carrying his stone up the mountain for it to be sent down, the mechanism intended to reduce executive cognitive load relies on the capacity it is meant to accommodate.

Because the mapping is organised around the EF underlying the skills, rather than tied to a specific neurotype, our mapping has relevance beyond neurodivergence: it can be applied to any group encountering similar struggles with EF demands. This is in keeping with the principles of Universal Design for Learning [40], which focus on making learning and academic practice accessible to as many people as possible, reducing the need for individual disclosure or accommodation. First-generation students, for example, often have to learn the culture and "hidden curriculum" of academia, as do international students after moving to a new country. Similarly, assimilating and monitoring tone is something that has been observed during cultural adaptation, and may be a barrier for creating meaningful relationships. These individuals may experience similar benefits from changes in institutional practice, as well as from being provided resources that can support scaffold per task.

Our findings reflect some of the most common struggles neurodivergent academics are experiencing and highlight ways in which this population is finding "fast" ways to alleviate their experiences. However, they cannot speak to the long-term implications of this AI use, and the results can raise concerns about loneliness and isolation if individuals are turning to AI for socioemotional support rather than building connections with others. Related concerns by individuals and institutions have been raised in regards to the longer-term impact on self-efficacy; the belief in one's ability to carry out a task [41]. It has been noted that frequent use of AI may result in dependency, consequently reducing a student's ability to solve problems independently [42].

This introduces a potential tension between short-term and long-term outcomes. Nonetheless, we argue there is nuance to this critique, since research has shown that cognitive off-loading combined with cognitive vigilance can support a Human-AI interaction to foster transformative learning [43].

Critical, informed use of AI tools as assistive technology to supplement cognitive demands could also foster a sense of self-efficacy and self-achievement, particularly amongst individuals who are constantly challenged by the interaction of their struggles with the environmental demands of HE. Research has shown that when GenAI tools function as a scaffold, rather than a substitute for skill development, they can be great tools for learners. Zhu et al. [35] worked alongside students with ADHD and expert coaches of ADHD and co-developed an intervention of metacognitive use of GenAI to support their struggles. Their findings reflect the fine balance that is needed when adapting a new tool for accessibility, since when used consciously to build metacognitive scaffold (often a challenge with ADHD), then GenAI tools can strengthen these EF skills. However, when the design is not careful or the use is not mindful and reflective, there is a risk of fostering dependency on supplemented metacognition. We therefore acknowledge that caution is merited until long-term outcomes can be established.

Limitations

Although we explored the experiences of staff and students, our respondents were predominantly students. This could bias perspectives on academic tasks towards learners, and may not fully reflect how neurodivergent staff in HE might be using these tools. Existing evidence [44] suggests that AI use does change with increased academic experience, finding that graduate students with more mastery were more likely to be more systematic and methodical across four self-regulated learning strategies, compared to undergraduates who were more reactive and exploratory. Future studies should look into how neurodivergent staff and students are using these strategies. Our data captured only the tasks participants reported using AI for; we inferred how and why. Although these inferences were theoretically informed, they relied on our interpretation influenced by our lived experiences as staff and students within HE rather than participants' lived experience. Future research should ask neurodivergent staff and students directly how and why they use AI for each task, and whether their approach differs from their neurotypical peers. Furthermore, given that workload and environment demands are different for members of staff depending on their role and level of seniority, data is still lacking on neurodivergent members of staff outwith lecturers and researchers, for example focusing on professional services and technicians. An additional limitation is the rapid pace of technological development. We are aware of tools that have emerged since we collected our data that could serve academic (e.g. Claude, Notebook LM) and non-academic purposes (e.g. Canva AI), but we would expect the underlying EF processes that these tools support to be broadly consistent.

Conclusion

Our study highlights the EF processes underlying some of the tasks that neurodivergent staff and students use AI tools for in UK HE. This provides a psychological lens through which to

interpret the use of AI that our participants reported, and our analysis demonstrates how AI might be meaningfully scaffolding several of these processes. However, caution is needed in terms of establishing an evidence-base for the longer-term best practice use of AI and how it can be used to support neurodivergent academics.

Declarations

AI use disclosure: In keeping with the research theme, the authors engaged with AI tools during the research process. At key stages in the paper, we have highlighted how AI was used. Additionally, Claude was used in editing for cohesion, proofreading and consistency and to help reduce wordcount and for synthesis of participants' individual reflexivity statements to a single paragraph. Google Labs was used to search for key papers. Copilot was used for "rubber duck" R coding during analysis and in editing text.

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