Navigating STEM Doctoral Programs with ADHD: Barriers, Workflow Challenges, and Adaptive Strategies

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Abstract

Despite legislative frameworks such as the Americans with Disabilities Act (ADA) and the Individuals with Disabilities Education Act (IDEA) aimed at advancing equity for individuals with disabilities, students with disabilities remain systematically underrepresented and inadequately supported in STEM doctoral programs. Through a mixed-methods study involving semi-structured interviews, experience sampling methods, and contextual inquiry with 13 PhD students with ADHD, we investigate how institutional structures shape their academic experiences. Our findings show that participants avoided formal disclosure and accommodations due to stigma and fears of being perceived as less capable, instead turning to informal peer networks that helped reframe their challenges as structural rather than personal failings. Additionally, participants described significant difficulties in consistently initiating and sustaining focus on academic tasks, resulting in episodic and fragmented productivity patterns that became challenging due to rigid academic structures that lack mechanisms to accommodate neurodivergent workflows. To navigate these challenges, participants employed personalized strategies such as body doubling, customization of productivity tools, and environmental adjustments—highlighting the invisible labor required to navigate an inaccessible academic system. Our findings contribute to a nuanced understanding of how participants with ADHD experience and manage systemic barriers in doctoral education and offer implications for more inclusive institutional policies and technological design interventions.

CCS Concepts

• **Human-centered computing → Accessibility**; • **Social and professional topics → Computing education**.

Keywords

Accessibility, Graduate Education, ADHD, Students with Disabilities, PhD Students with ADHD, ADHD Technology

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1 Introduction

Over the past decades, legislative frameworks such as the Americans with Disabilities Act (ADA) [60] and the Individuals with Disabilities Education Act (IDEA) [1] have expanded access to higher education for students with disabilities. More recently, programs like AccessComputing [2], DO-IT [12], CRA-WP [15], and the LEAP Alliance [13] have worked to support disabled and underrepresented students in STEM. Despite these efforts, doctoral students with disabilities remain underrepresented. For example, the 2023 Survey of Earned Doctorates (SED) reported that only 130 PhD graduates in computing self-identified as having a cognitive disability, including ADHD, representing less than 0.05% of all computing PhD recipients in 2023 [43]. This statistic stands in contrast to the estimated 3–6% global prevalence of ADHD among adults [4, 26], even when accounting for common data collection challenges such as inconsistent definitions of disability, stigma-related nondisclosure, and disability survey limitations [9]. This disparity likely reflects more than just gaps in reporting—it points to persistent structural barriers within academia. Doctoral programs often assume neurotypical norms, such as sustained attention, linear productivity, and rigid timelines [48]. For students with ADHD, these expectations are not inherently unmanageable, but they often conflict with how their attention, energy, and executive function operate across time [5, 16, 49]. This mismatch can result in academic environments that are difficult to navigate without significant, ongoing self-accommodation.

We focus specifically on PhD students in STEM fields with ADHD for several reasons. ADHD remains one of the most prevalent but under-discussed cognitive conditions in higher education, especially at the doctoral level, where formal support structures become less aligned with the distinctive demands and self-directed nature of doctoral research [14, 48, 58]. PhD students are expected to manage unstructured, independent, and long-term work with minimal guidance—conditions that may exacerbate ADHD-related challenges with focus, task initiation, motivation, and time management [3, 30]. STEM disciplines, in particular, emphasize sustained focus, precision, and high productivity under rigid expectations, creating environments that may be especially difficult for neurodivergent students to navigate [29, 57]. Although traits associated with ADHD—such as cognitive dynamism, persistence, and hyperfocus—can be assets in research, these potential strengths are often unsupported or misunderstood in academic systems built around linear, uninterrupted work [51]. This disconnect creates a structural misfit that puts PhD students with ADHD at a disadvantage, especially in computing and other STEM disciplines where performance expectations are both implicit and high-stakes.

To better understand the intersection of ADHD and doctoral studies, our research addresses the following: (1) the accessibility barriers that PhD students with ADHD encounter in their programs, (2) how institutional structures fail to accommodate ADHD-related attention, motivation, and pacing patterns in students' day-to-day academic work, and (3) the strategies PhD students with ADHD employ to navigate these barriers and sustain progress.

To explore these questions, we conducted a two-part mixed-methods study. The first part involved semi-structured interviews with five current and recently graduated PhD students diagnosed with ADHD. Insights from this phase informed the second part of the study, which included experience sampling and contextual inquiry with nine PhD students in STEM fields at U.S. universities. Together, these methods offer a grounded and situated understanding of how ADHD interacts with the demands of doctoral education.

Our findings reveal that participants strategically navigate challenges related to stigmatization and workflow interruptions. Participants expressed reluctance to disclose their diagnoses and pursue necessary accommodations due to prevalent misconceptions about neurodivergence in academic settings, frequently resulting in isolation. In response, participants leveraged informal peer support networks, which helped them to reconceptualize their challenges as manifestations of systemic barriers rather than personal deficiencies. Our findings also show that participants' academic workflows were characterized by fluctuating motivation, high sensitivity to interruptive environments, and episodic productivity patterns—challenges exacerbated by rigid academic structures and neurotypical expectations that lack accommodation for neurodivergent work processes. We also examine the coping strategies participants employed to navigate these challenges, including the use of digital tools, adaptive behavioral techniques, and environmental modifications that compensated for structural processes and academic norms that failed to accommodate their needs.

Our study offers three primary empirical contributions: (i) it provides detailed accounts of how PhD students with ADHD navigate the inaccessible structure of doctoral education, including stigma, disclosure, and insufficient institutional support; (ii) it demonstrates how neurotypical academic expectations and inflexible institutional structures, rather than the inherent characteristics of ADHD, create barriers when they clash with participants' natural patterns of fluctuating attention and episodic productivity; and (iii) it identifies the informal and self-directed strategies participants used to manage accessibility and maintain progress, such as peer networks, productivity tools, and adaptive routines.

2 Related Work

In this section, we review prior work in three key areas: (1) experiences of disabled graduate students, (2) studies on neurodiversity and ADHD in higher education, and (3) existing technological interventions and design approaches for supporting students with ADHD. This synthesis highlights both the contributions and limitations of existing literature and provides a foundation for situating our study's methodological and novel contributions.

2.1 Disabled Graduate Students' Experiences

Graduate education presents fundamentally different challenges than undergraduate education due to its emphasis on self-directed research and limited structured academic scaffolding [30, 35]. Unlike undergraduate programs, which follow a clear, course-based curriculum with regular assessments and instructor guidance, doctoral education typically involves independently managing long-term research projects, actively seeking mentorship, and meeting fixed milestones [3]. These tasks necessitate strong executive functioning, effective time management, and reliable self-regulation—skills that can present particular difficulties for students with ADHD [5, 16, 48].

Disability services at most institutions remain primarily designed for undergraduate populations, and this focus leaves graduate students chronically underserved [58]. This systemic oversight creates what researchers have termed an "access differential" and "inequitable access" [52], where disabled graduate students encounter disadvantages due to accommodation frameworks that fail to address the complexity of advanced academic work. For doctoral students, these inequities are pronounced due to the distinctive nature of PhD programs, which involve self-directed research projects spanning multiple years, ambiguous milestones, collaborative research environments, and advanced technological requirements.

Traditional accommodations designed for undergraduates, such as extended deadlines or note-taking services, are inadequate for addressing the complex demands of graduate studies [19, 53]. The resulting "access labor," which is the uncompensated work required to secure appropriate accommodations, falls disproportionately on these students [11, 53]. Institutional policies categorize essential doctoral activities as "personal study," thereby excluding disabled graduate students from formal accommodation frameworks [58]. In addition, disability service officials often lack specific training to address graduate-level needs [58, 59]. At the same time, rigid institutional timelines and traditional mentorship structures rarely accommodate neurodivergent work patterns [20, 40].

Prior work has explored the experiences of graduate students with sensory disabilities, including those who are blind/low-vision or deaf/hard-of-hearing [35, 52–54]. These studies identified significant barriers, including technical inaccessibility of research tools, dependency on inefficient accommodations like human readers, and inadequacies of disability services that are ill-equipped for doctoral research demands. However, disability experiences are heterogeneous, and there remains a gap in understanding the specific experiences of neurodiverse STEM doctoral students, especially PhD students with ADHD [29].

2.2 Neurodiversity and ADHD in Academia

Current research indicates a significant misalignment between traditional academic structures, which are primarily designed for neurotypical cognitive patterns, and the cognitive styles of neurodivergent students [23, 49]. Within these conventional frameworks, cognitive differences associated with ADHD, including those affecting executive functions such as time management, organizational skills, and sustained attention [22, 36, 47], are often characterized as deficiencies that need to be corrected [32, 39]. This deficit-focused perspective persists despite increasing recognition of the cognitive strengths associated with ADHD, including intense hyperfocus, creative non-linear thinking, and adaptive resilience, which could significantly enhance complex and advanced doctoral research [37, 51].

This disconnect is especially evident at the graduate level, where existing support systems fail to address the independent nature of doctoral-level research. Neurodiverse students must manage these academic demands with inadequate institutional resources [57]. Consequently, they develop alternative, community-based coping strategies, such as "body doubling," which remain largely unrecognized and unsupported by institutional policies [24, 25].

Prior studies on neurodivergent students have largely relied on surveys and retrospective self-reports, which offer limited insight into the real-time, situated challenges that students with ADHD face in their daily academic lives. While existing work has explored neurodivergent experiences broadly [8, 45, 49, 57], our study differs in its exclusive focus on PhD students with ADHD in STEM fields and its use of multi-method, real-time data collection. Specifically, we employ qualitative methods such as interviews, experience sampling, and contextual inquiry, which allow us to capture students' strategies as they are used in context. By triangulating reflection (interviews), moment-to-moment state tracking (experience sampling), and observed behaviors (contextual inquiry), our approach yields an ecologically valid, situated understanding of how PhD students with ADHD navigate academic demands, offering a richer and more nuanced view of their lived experiences.

2.3 Assistive Technology and Interventions for Students with ADHD

Current assistive technologies for students with ADHD represent a diverse spectrum of innovations that simultaneously offer potential benefits while frequently falling short of addressing doctoral-level needs. Socially assistive robots [41, 44] demonstrate how embodied agents can provide structure to study routines through reminders, task breakdowns, and companionship. However, these technologies typically undergo testing in controlled, short-duration undergraduate environments rather than addressing the extended, self-directed demands characteristic of doctoral research, such as dissertation writing or navigating peer review processes.

Similarly, virtual reality (VR) environments have shown promise in educational contexts, helping students with ADHD minimize distractions during classroom activities or focused homework sessions [17, 42]. However, doctoral-level work involves a broader range of activities—such as fieldwork, collaborative coding and data analysis, lab experimentation, and spontaneous academic discussions—that extend beyond the controlled and task-specific settings these VR interventions were designed for. As a result, applying VR in these contexts raises questions about its scalability and fit for the diverse and dynamic nature of doctoral research.

Many existing tools intended to support students with ADHD [7, 27, 28] fall short of meeting the day-to-day demands of doctoral research. Some are widely adopted, yet their usability often does not align with the specific needs and workflows of graduate students with ADHD, such as supporting episodic productivity, managing fluctuating attention, or accommodating emotional variability. This gap points to a broader issue: a lack of consistent attention to how neurodivergent users interact with academic technologies in real contexts. Participatory design (PD) offers one possible approach for addressing this issue by involving users directly in shaping tools that reflect their lived experiences and preferences [55]. For instance, Kong et al.'s work on co-designing robotic companions with neurodivergent individuals surfaced user needs, such as autonomy and personalization, that generic solutions often overlook [38]. However, such efforts are still limited in scope and rarely extended into scalable, long-term infrastructure that supports doctoral workflows.

In light of these limitations, our study focuses on how PhD students with ADHD navigate academic work in practice, drawing on real-time data to better understand their challenges and the strategies they develop outside of formal interventions.

3 Method

In contrast to prior work using surveys that focused primarily on undergraduate students, we examined how PhD students with ADHD in STEM fields navigate the distinct demands of doctoral education and the strategies they develop to sustain progress over time. We asked: What barriers do PhD students with ADHD face in navigating doctoral programs? How do the structures and expectations of doctoral STEM education interact with ADHD-related patterns of attention, motivation, and pacing? And what self-developed strategies do students use to cope with these challenges? To investigate these questions, we employed a mixed-methods approach consisting of semi-structured interviews, experience sampling (ES), and contextual inquiry (CI).

3.1 Participants

Participants in our study were doctoral students enrolled in STEM PhD programs across various universities in the United States. They represented different stages of doctoral education, ranging from the first to the fifth year of study at the time of data collection (Tables 1 and 2), with one participant having completed their degree. Only two participants identified as men. This imbalance may reflect broader trends in ADHD studies, as recent trends show a narrowing gender gap in diagnoses, with women and non-binary individuals increasingly seeking evaluation and disclosing mental health conditions such as ADHD [50]. One student (A1) participated in both the interview study and the experience sampling and contextual inquiry study; all other participants took part in only one of the two studies. Throughout this paper, we use an "A" prefix to denote participants in the interview study and a "B" prefix to indicate those who participated in the experience sampling (ES) and contextual inquiry (CI) study.

Given the small population that met our inclusion criteria, we have deliberately limited demographic reporting to ensure participant anonymity. For consistency and to further protect confidentiality, we employ gender-neutral pronouns (they/them) when referring to all participants throughout our report.

3.2 Data collection

This study employed a mixed-methods design integrating interviews, experience sampling (ES), and contextual inquiry (CI) to investigate the academic experiences and workflow challenges of

Table 1: Interview Study Participants and Tools/Strategies Used

PID	Comorbid Disability	Years in Program	Tools/Strategies Used
*A1	Anxiety	2	Spark, to-do lists and planners
A2	None	Graduated**	Pomodoro technique
A3	Anxiety and suspected ASD	3	Color-coded calendar segmentation
A4	Sensory processing disorder	2	Visual timers, Workona, Jenni AI, Otter AI
A5	None	5	Reverse goal mapping

Note: ASD = Autism Spectrum Disorder; *Also participated in ESM/CI study; **4 years post-graduation

Table 2: Experience Sampling and Contextual Inquiry Participants and Tools/Strategies Used

PID	Comorbid Disability	Years in Program	Tools/Strategies Used
B1	Mild ASD and previous BPAD	1	Productivity apps – WillStone, OneSec, Qbserve
B2	Unspecified anxiety disorder	2	Music & Meditation
B3	Anxiety, depression, gender dysphoria	2	Dumb phone, sticky notes on Kanban board
B4	None	1	Visual timers, walking breaks
B5	None	2	Google Calendar
B6	Depression and Anxiety	5	Body doubling
B7	None	5	Timers, website blocking apps, body doubling
B8	ASD (PDD-NOS)	1	None

Note: ASD = Autism Spectrum Disorder; BPAD = Bipolar Affective Disorder; PDD-NOS = Pervasive Developmental Disorder–Not Otherwise Specified.

PhD students with ADHD. We recruited participants through personal networks and snowball sampling, as it was likely that graduate students might already know each other. Our final sample included 13 unique individuals—five in the interview phase and nine in the ES and CI phase—with one participant contributing to both phases. This overlap occurred because the second round of recruitment for the ES and CI phase drew from the same outreach channels as the initial interview phase.

Using the same networks facilitated access to a highly relevant population—doctoral students in STEM with ADHD who were already engaged in conversations around neurodiversity. This sampling strategy may also introduce bias, as individuals connected to these networks may be more self-aware, more resourced, or more willing to discuss their experiences than the broader population of PhD students with ADHD. This may limit the diversity of perspectives represented, yet the approach enabled rich, contextually grounded insights from participants actively reflecting on and navigating structural challenges in their programs.

For the interview phase, our recruitment included students who had participated in computing doctoral programs within the past decade, regardless of their current enrollment status. The ES and CI phase targeted active PhD students engaged in research activities beyond coursework. Participants in all studies were recruited through personal networks and disability support organizations, meeting two key criteria: (i) current enrollment in a STEM doctoral program at a U.S. institution and (ii) self-identification with a formal ADHD diagnosis.

3.2.1 Interviews. Interviews were conducted through Zoom, lasted between 35 and 90 minutes, and were video and audio-recorded with the participants' consent. The interview protocol includes open-ended questions designed to elicit detailed responses about the participants' experiences with academic accommodations, accessibility of campus environments, and faculty support. For instance, we asked them: How does the department or school currently support your needs at the graduate level? How does this support compare with your experiences at the undergraduate level? What tools/techniques do you use to mitigate ADHD challenges?

3.2.2 Experience Sampling Method (ESM). We adapted the ESM framework from Hektner et al. [33], utilizing both signal-contingent sampling (fixed-time prompts) and event-contingent sampling (self-initiated response). Participants received three daily prompts for ten days during typical work hours (e.g., 10 AM, 1 PM, 4 PM) via participants' preferred mobile communication platform, e.g., SMS, WhatsApp, Discord. The ESM protocol was designed to minimize workflow disruption. Participants were informed that the prompts were not intended to interrupt their current task flow and that they could respond immediately after completing their current task to preserve focus and concentration. Prompts included structured open-ended questions:

- Prompt 1 assessed participants' current academic task, self-rated focus level (1–5 scale), and rationale for their rating.
- Prompt 2 evaluated task continuity (whether they had switched tasks since Prompt 1), satisfaction with productivity (1–5 scale), and factors influencing satisfaction. To account for missed Prompt 1 responses, an alternate Prompt 2 asked about their current task, challenges, and productivity satisfaction.
- Prompt 3 focused on distractions by asking participants if they were experiencing distractions at that moment, if they

had faced distractions throughout the day, and what strategies they employed to mitigate them.

Over the ten-day study period, a total of 235 out of 264 prompts were completed across the nine participants, yielding an average response rate of 89%, with individual completion rates ranging from 80% to 100%. Most participants responded within 10–15 minutes, with several replying even faster. For example, B6 consistently responded within 1–3 minutes, while B1 and B2 averaged under 10 minutes. This high responsiveness minimized recall bias and enhanced ecological validity, strengthening our ability to analyze attention, workflow, and coping strategies in real time and supporting triangulation with interview and contextual inquiry data.

3.2.3 Contextual Inquiry (CI). To contextualize ESM findings, we conducted 150-minute sessions with three participants (B1, B3, B7) from the experience sampling study. Sessions involved direct observation of academic tasks (e.g., academic writing, reading) in participants' natural work environments, e.g., office labs. Following observations, we conducted interviews to debrief and discuss participants' workflow choices, observed strategies, and environmental influences.

This approach was intended to improve ecological validity by triangulating real-time self-reports with direct behavioral observations. However, we recognize the limitations in fully capturing the complexity of participants' lived experiences.

3.2.4 Methodological Rationale: Combining ESM and CI. We employed the Experience Sampling Method (ESM) and Contextual Inquiry (CI) to complement and deepen insights from the interviews. Interviews provided high-level reflections on participants' experiences and strategies; ESM captured real-time fluctuations in focus and workflow; and CI allowed for close observation of behaviors and environmental influences. Combined, these methods offered a more situated and layered understanding of how participants navigated daily academic demands.

ESM provided three key advantages:

(1) Data collection through real-time prompts during participants' typical workdays.
(2) Minimized observer effects by capturing experiences without researcher presence.
(3) Longitudinal tracking of focus patterns, productivity satisfaction, and distraction management.

Conversely, CI offered:

(1) Direct observation of work strategies in participants' actual environments.
(2) Rich contextual data about environmental influences and adaptive behaviors.
(3) Opportunities to probe observed behaviors through follow-up interviews.

We acknowledge the potential influence of researcher presence during CI sessions, notably the "body doubling" effect, where participants may have benefited from the accountability of being observed. However, this effect aligns with known ADHD coping strategies, as participants reported regularly using similar social accountability mechanisms in their natural work environment. Rather than compromising data validity, this aspect of CI provided valuable insights into how doctoral students consciously or unconsciously structure their environment and behavior to support focus and productivity.

3.3 Data Analysis

We used a grounded theory approach [31, 46, 56] to analyze data across interviews, ESM entries, and contextual inquiry. One researcher conducted line-by-line coding to develop codes, which were refined through constant comparison across participants. For example, "hyperfocus" and "inconsistent energy levels" were initially coded separately, but comparing codes across ESM entries from participants showed that both reflected reliance on short, high-focus intervals followed by cognitive fatigue. This constant comparison led us to group the codes under the broader theme of episodic productivity. In weekly team meetings, we reconciled codes and refined themes until theoretical saturation was reached.

We triangulated findings between experience sampling (ESM) and contextual inquiry (CI) datasets, validating observations across both methods. This approach confirmed that behaviors observed during CI sessions genuinely represented participants' natural workflows as captured through ESM. For example, B3's implementation of structured breaks—observed during CI sessions—was independently self-reported in 20% of their ESM entries (5/25). Similarly, B7's frequent task-switching behavior, documented during CI, corresponded with their ESM data (7/25 responses, 28%), demonstrating that these patterns represented authentic strategies rather than behaviors influenced by researcher presence. This iterative process of comparing real-time self-reports with direct behavioral observations confirmed the validity of our findings while capturing both the breadth of daily challenges and the depth of participants' adaptive strategies.

Triangulating data across interviews, experience sampling, and contextual inquiry enabled us to confirm findings across the three datasets and enriched our understanding of how doctoral students with ADHD navigate productivity challenges within authentic academic contexts, providing complementary perspectives on their lived experiences.

4 Findings

Our analysis shows that participants struggle with the burden of stigma and the challenges of disclosure due to ADHD's invisibility, the difficulty of forging distinct graduate communities, and the need for both informal support and tailored strategies. Together, these themes shape not only how students perceive themselves but also how they navigate the rigors of doctoral study.

4.1 Stigma, Non-Disclosure, and the Power of Community

The invisible nature of ADHD creates a complex relationship with identity and disclosure in doctoral programs. Participants described a culture of silence around disability, where few students speak openly about their diagnoses or accommodations. As A1 noted, disability was *"not a very open thing"* in their department, reflecting broader norms that discourage the acknowledgement of neurodiversity. This silence left participants feeling isolated and uncertain about how their needs would be received by peers and faculty. This uncertainty extended to faculty interactions. A1 described sending their accommodation letter to the department chair but receiving no follow-up, leaving them unsure whether their needs were acknowledged. This kind of inaction reinforced the sense that requesting accommodations might be interpreted as a burden or a mark of lesser capability:

> *"I didn't want her first impression of me to be about my disabilities instead of like me as a student or researcher."* - A1

Consequently, participants described making strategic decisions about whether, when, and how to disclose. The fear of being defined by their disability rather than their academic merit shaped how and when they asked for support. A4 described feeling caught between asserting their rights and avoiding perceptions of unfairness or inadequacy.

> *"I know I could be the one to say like actually you have to do this for me, but I feel like I'm walking this line of like, well I'm worried people will say what I'm asking for isn't fair and that I shouldn't be a PhD student."* - A4

For A4, every request for flexibility becomes a risky act, one that might confirm a negative stereotype about their capabilities. The risk of being judged led some participants to preemptively frame themselves as "problem students," reflecting a form of self-protection rooted in anticipated stigma:

> *"So I basically tell people, ' Hi, I'm like the bad student'... I'm the problem student. I'm sorry because I missed every deadline. I've had to defer two classes."* - A4

For some participants, accommodations, though formally granted, did not feel like legitimate forms of support. A5 described how even though extra time was provided through disability services, they internalized this adjustment as "cheating" or "taking advantage of the system." While A5 did not attribute this feeling to any explicit judgement by others, their comments suggest that institutional messaging around accommodations may have shaped this self-perception. The lack of nuance in these announcements created a visible divide, reinforcing the idea that accommodations were exceptions rather than equitable adjustments. A5 recalled how this dynamic intensified their impostor syndrome:

> *"I came in with severe impostor syndrome, and then every accommodation feels like an excuse. So whenever I take more time, it feels like my accommodation is an excuse."* - A5

The feeling stemmed less from explicit judgment by others and more from an internalized expectation to perform identically to peers despite needing support. In the absence of open conversation about accommodations or visible institutional messaging that framed the accommodations as legitimate, A5 came to view their own access needs as evidence that they did not belong. Rather than experiencing accommodations as a form of equity, they experienced them as a mark of inadequacy.

This fear of stigma was so pervasive that it shaped interactions even within the context of this research. For example, when scheduling a contextual inquiry session, B7 explicitly asked the researcher not to disclose that the observation was ADHD-related to anyone in their work environment. This request reflected a desire for privacy, driven by concerns about how they would be perceived by lab peers and faculty. Even in a study designed to understand and support neurodivergent experiences, participants navigated visibility with caution.

Against this backdrop of silence, stigma, and self-doubt, peer support served as a coping resource that evolved into a site of transformation. Several participants described finding or helping to build informal communities of disabled graduate students, particularly for PhD students who shared ADHD-related struggles. Beyond providing practical advice on requesting accommodations and navigating faculty interactions, these communities created an environment where students felt understood without needing to explain or justify their struggles. While these communities provided support, what made them transformative was the reframing of what participants had internalized as personal failure. When A5 found community among other disabled graduate students, they began to view their missed deadlines, delayed progress, and executive function differences as reflections of systemic misalignment rather than personal inadequacy:

> *"It was really nice to feel validated in my struggles... it was not unique to me that it wasn't a me problem... the academic system had its failings rather than us failing within the academic system and that was the most important thing when I found my solidarity group."* - A5

Realizing they were not alone allowed participants to challenge the belief that they were simply bad students. Instead, through the shared experiences in these informal peer communities, these students interpreted their struggles as a mismatch between their cognitive styles and the rigid, neurotypical norms embedded in doctoral education. This reframing reduced shame and opened the door to new forms of self-advocacy. In some cases, participants extended this shift beyond themselves. A4 shared how they spoke up about their accommodations during class to both support a peer who had recently been diagnosed and to assert their own needs:

> *"So in that class, I spoke up and asked for it... I didn't say it was for her, I was just like, 'Oh, just to remind you, I need this for my accommodations' and then the other students thanked me because that one student needed it, but the other students who didn't have disabilities, they were actually like, oh this is so much better, thank you."* - A4

A4's decision to speak up created a moment of shared benefit, affirming their own needs while quietly supporting a peer and improving the experience for the broader class. For participants, the fear of confirming negative stereotypes keeps them silent. Speaking up disrupted that pattern. It reframed what felt like a personal flaw into a shared and addressable problem, showing that the accommodations they once feared would mark them as inadequate could benefit others. These experiences helped participants move from isolation to a sense of collective orientation, not just the relief of "I'm not alone," but the empowerment of "I can make this better for someone else too." In doing so, participants came to see themselves as agents capable of shifting institutional norms, rather than passive subjects defined by their struggles within them.

In this section, our findings highlight how participants with ADHD navigate stigma, silence, and internalized doubt in academic environments that often render their needs invisible. Fear of being seen as less capable led many to withhold disclosure or label themselves as "problem students" to preempt judgment. These dynamics, combined with inconsistent faculty engagement, contributed to feelings of isolation and impostor syndrome. Informal peer communities played a critical role in reframing these experiences. Rather than viewing their struggles as personal failure, participants began to see them as a mismatch between their cognitive styles and rigid academic norms. For our participants with ADHD, this shift was transformative, reducing shame, encouraging self-advocacy, and creating space for mutual support. By speaking up and supporting others, participants met their own needs and contributed to reshaping expectations in their environments.

4.2 Initiation and Motivation Challenges

Our findings showed that for PhD students with ADHD, motivation functioned as a fluctuating and often unpredictable force in their academic routines. Participants consistently described variable focus and productivity levels, demonstrating cyclical patterns rather than steady engagement. These fluctuations became expensive in doctoral-level contexts that relied on consistent, linear productivity without built-in scaffolds for accountability or adaptation. In such environments, students were expected to self-regulate their work pace over long, unstructured timelines, often without meaningful support from advisors or departments.

The initial phase of task initiation frequently presented a significant barrier to establishing productive momentum, as B6 articulated:

> *"I am honestly not making much progress on the assignment, but I am pretty sure I will get more into it in the next half hour or so. It usually takes me some time to get settled into my assignment before I actually make good progress on it (some would say it takes time to 'lock in' in today's slang)."* - B6

This awareness of their workflow patterns was often accompanied by the recognition that motivation was tightly coupled with deadline proximity. In the absence of immediate time pressure—a common feature of long, open-ended PhD timelines—participants described being more vulnerable to procrastination, with some, like B6, noting that this often led to increased stress and a sense of falling behind:

> *"But I'm also not worried because it's not due until midday tomorrow - except not being worried makes me tend to procrastinate stuff more and then stress myself out."* - B6

This reflection captures a common internal conflict experienced by participants—an acute awareness of how they tend to work, alongside a sense of inevitability about procrastination and its emotional toll. These cycles are not exclusive to students with ADHD, yet they carry greater weight in PhD programs, where delays in progress can accumulate over time and expectations from advisors often leave little room for flexible pacing or alternative work rhythms.

Task aversion was another factor affecting motivation. Participants described consciously avoiding tasks they perceived as tedious, frustrating, or unimportant, regardless of their objective value. B7 described this experience during their research work:

> *"I am fiddling with my phone and Googling random things because I do not really want to do the referee comments because I find them annoying, so it is hard to focus."* - B7

To combat task aversion and the difficulty of getting started, some participants relied on strategic "warm-up" routines. One common approach involved beginning with simple, low-effort tasks—like replying to emails—to ease into the workday. As B1 described:

> *"With my ADHD and ASD, I usually get started with some easy tasks every day, like sending emails, so that I do not get overwhelmed by getting started with [difficult tasks]"* - B1

These routines helped reduce motivation barriers, yet they also delayed engagement with high-priority work, sometimes reinforcing the perception that participants were falling behind. As A5 explained, the disconnect between their actual working capacity and the expectations imposed by their advisor often left them feeling inadequate:

> *"I feel like I'm always catching up, like I have less time and energy than most people to do the same amount of productivity that is expected... there's been a mismatch between what I can produce and what my advisor expects from a typical grad student and that has been hard because the onus is almost always on me to like, bridge that gap, and that has been, you know, kind of demotivating."* - A5

These reflections illustrate how academic norms around linear productivity and self-direction often fail to account for neurodivergent work patterns, leaving students to navigate advisor expectations shaped by neurotypical assumptions about focus, pace, and output.

Conversely, when participants found tasks genuinely engaging or aligned with their interests, motivation surged dramatically, leading to episodes of hyperfocus. These moments transformed previously avoided tasks into manageable or even enjoyable experiences, as B2 described when facing a tedious assignment:

> *"I found the first problem quite tedious and repetitive and thus kept looking for ways to make it less so/excuses to put off doing it. Eventually, I settled on a solution that was 'creative' enough to make me excited enough to trigger my hyperfocus."* - B2

This transition from aversion to intense focus highlights the powerful role that novelty and intrinsic interest played in participants' motivation. For participants, these episodes of hyperfocus provided bursts of extraordinary productivity, though they remained largely unpredictable and difficult to initiate intentionally. Their ability to engage deeply was often reactive—sparked by interest or deadline stress—rather than something they could plan for, leaving them vulnerable in doctoral-level research environments that expect consistent, steady progress.

Emotional state also significantly influences motivation patterns. External stressors—ranging from political events to academic pressures—frequently disrupted participants' engagement with their work. B8 described how emotional processing took precedence over academic responsibilities:

> *"I am skipping class to mope about the election and commiserate with my cohort about the insanity of advisor matching… I feel focused at about a 3 [out of 5], mainly because I am not trying to focus."* - B8

This example illustrates how emotional dynamics created a characteristic cycle in participants' daily experiences. Later that same day, B8's anxiety about an upcoming meeting left them feeling scattered, noting:

> *"I am currently between tasks, will shortly meet with a potential advisor. I remain very distracted and my anxiety is high."* - B8

Their focus returned only after the meeting concluded:

> *"I just finished a meeting with a potential advisor. During this task, I was able to focus, in part from alignment with special interests."* -B8

This emotional-motivational pattern—oscillating between disengagement and immersion—appeared consistently across participants' experiences.

Participants relied on deadline pressure to catalyze work initiation when interest or emotional alignment was absent. Some viewed this characteristic as an advantage, especially in their ability to hyperfocus under time constraints. B2 explained this perspective:

> *"I can hyperfocus on studying and focus longer/harder than neurotypical people generally can, so I am better at cramming."* - B2

While this capacity sometimes produced successful outcomes, it frequently came with significant emotional consequences. B1 described the psychological toll of this pattern after delaying a writing task:

> *"Sometimes I don't understand why I procrastinate because the time I spend worrying is even more painful than completing everything in 2 hours."* - B1

Participants' challenges with motivation were not simply a result of internal fluctuations. Instead, these difficulties were compounded by academic systems that penalized delays, demanded continuous output, and left little room for individualized pacing. As A4 shared:

> *"So like I said, the advisor who cares more about time... I actually didn't get in my yearly review; they [the advisor] wrote a letter saying, We [the department] understand you got these exceptions this year, but it can't happen again."* - A4

Such expectations reinforced a persistent sense of pressure and inadequacy, further straining participants' relationship to their work.

For our participants, motivation rarely followed a consistent or linear pattern. Their engagement was shaped by shifting interest, urgency, and task aversion. They were capable of deep focus, though it was often triggered by deadlines or bursts of interest, rather than through planned, sustained effort. In academic environments that assumed steady, self-regulated progress, these irregular rhythms became a liability. While challenges such as procrastination or unstructured time may affect many PhD students, these difficulties were intensified for our participants due to executive function difficulties that interacted poorly with academic environments designed around neurotypical workflows—systems that imposed rigid deadlines and milestones without adequate scaffolding for neurodivergent cognitive patterns. Without institutional flexibility, participants were left to manage these compounded challenges alone, absorbing the emotional and academic consequences of working in systems not designed for their cognitive patterns.

4.3 Maintaining Focus in Interruptive Environments

Participants described difficulty maintaining focus after eventually starting academic tasks. Their concentration could be interrupted by both external and internal distractions. Distractions are a common part of academic life. Yet, we found that the structure of doctoral work—long, unstructured hours, high cognitive load, and lack of built-in support—made even minor lapses in attention significantly more costly. Participants' difficulties reflected the misfit between their cognitive rhythms and academic systems that offered little scaffolding or flexibility. B7 noted how even small disruptions in shared environments could break their train of thought:

> *"People were chatting in the office, and a friend was texting me. It made it hard to keep thoughts in my head because I kept getting distracted by what was going on around me."* – B7

Sensory inputs such as noise or smells were also hard to ignore. In another reflection, B7 described how intermittent chewing sounds made it difficult to concentrate. These issues were common in spaces like shared offices or labs, which were not designed with attentional needs in mind.

Digital notifications further disrupted focus. B6 shared: *"My ADHD, since I am working at home, is making me want to check every little email notification."* Participants tried strategies like putting phones in another room, but these were not always practical. As B1 explained:

> *"I am waiting for some phone call so I need to keep checking my phone all the time, that makes me easily distracted...I feel that if I can stay physically far away from the phone, I'm less likely to be distracted. But if I have to use my phone, I can hardly say no to this temptation."* - B1

The need to stay reachable often made it hard to maintain that strategy.

Internal distractions also played a role. B3 described their mind as "restless" during lectures, and B5 reported "zoning out" during seminar talks. For some, even routine communication was difficult to process when attention was split. As B5 recalled:

> *"I was super distracted by messages from my mentees, and I couldn't quite parse what the guy holding office hours was saying to me, so I had to ask him to repeat a lot."* – B5

Unlike typical momentary distractions, B5's inability to process verbal information while receiving messages exemplifies the more profound attentional dysregulation characteristic of ADHD. These disruptions often had lasting consequences throughout the day, with B5 later concluding: *"I've been scattered today and not much has gotten done."*

Regaining focus after even brief interruptions posed a major challenge for participants. Minor disruptions often led to a complete loss of momentum. This may seem typical of graduate demands, where long, unstructured tasks and self-managed schedules require sustained attention, yet for students with ADHD, the consequences were more severe. These disruptions didn't just delay progress; they often derailed entire work sessions, highlighting how the structure of doctoral work can disproportionately impact those with sensitive focus patterns.

B6 described how a small incident threw off their entire workflow:

> *"With the smoothie thing, I had to context switch off my work, so once I did that, I wasn't focused anymore… I was not motivated to work on the app anymore, nor the reading."* – B6

At the same time, not all lapses led to complete disengagement. Some participants used short, intentional breaks to reset their attention. B6 also described watching brief videos between reading sessions, which helped them stay engaged without abandoning the task:

> *"Sometimes I lose focus and watch a few YouTube shorts before getting back into reading, but I usually transition between the two activities pretty quickly."* – B6

These self-directed pauses gave participants a way to manage attention more deliberately. When used intentionally, they helped restore focus and allowed participants to continue with demanding tasks rather than becoming completely derailed. These moments of regained focus through brief, intentional breaks were part of a broader pattern: participants actively developed strategies to manage their attention throughout the day. To support sustained concentration, many created personalized work environments and routines that minimized distractions and aligned with their attentional rhythms. B3, for instance, chose to study in a coffee shop without WiFi:

> *"I purposely went to a coffee shop that does not have WiFi so I can just read the textbook and struggle with practice problems."* – B3

These strategies helped in some cases but were not consistent solutions. B4 noted that changing locations could help focus by adding novelty, but also made it hard to restart tasks. Participants also used techniques like music, movement, and caffeine. B4 reported, *"I use music to help me focus as well as walking breaks and caffeine."* These approaches worked at times, but often wore off as fatigue set in. B1 shared:

> *"I'm getting tired because of paper writing… I got distracted, especially when I got stuck and my ears got sick of the strong rhythmic music."* – B1

Fatigue often followed periods of hyperfocus. On another day, B1 reported needing to stop after two hours of hyperfocus. For our participants, managing attention required constant awareness of its limits and fluctuations. While focus is a limited resource for many students, our participants described needing to monitor and adjust their routines more actively throughout the day to maintain engagement. Mornings were especially challenging until medication or caffeine became effective. As B2 noted, *"I just woke up… No ADHD meds yet."* But once routines were established, some participants found it easier to stay on track. A1 reflected that a *"quiet relaxing morning"* helped them sustain focus later in the day.

Within the structure of doctoral programs—which assume consistent, self-managed concentration and fast turnaround—interruptions in focus became consequential because there was little room to accommodate them. Participants described attention as fluctuating and context-dependent, shaped by stress, energy levels, environment, and competing demands. Yet academic environments rarely offered flexibility in how, when, or where work could be done. As a result, even small lapses in focus could snowball into larger productivity setbacks.

In sum, participants' difficulties with focus reflected a deeper mismatch between their attentional patterns and the expectations built into doctoral education. Their focus was episodic and reactive, requiring adaptive strategies and structural flexibility. While many developed creative methods to manage their attention, these strategies were often undermined by systems designed around uninterrupted concentration and linear output. In the absence of institutional support, routine fluctuations in focus became liabilities—and even basic academic progress turned into an exhausting, high-stakes process.

4.4 Adaptive Strategies and External Supports

To navigate the demanding and inflexible structures described above, participants developed various adaptive strategies to manage their academic workflow. These strategies varied across participants, reflecting individual preferences and contexts. Despite the variability, common patterns became visible in how participants structured their time, used tools, and regulated attention in ways that leveraged their strengths while mitigating their challenges. These adaptations were not just personal hacks; they often compensated for the lack of structured, disability-informed support in doctoral programs.

Participants frequently relied on external structures, such as meetings, appointments, or check-ins, to provide a framework for focus. External accountability proved to be a powerful motivator for many participants. B3 described how an upcoming meeting with their advisor heightened their concentration:

> *"I'm writing code for my data discovery tool. I'd say my focus is about a 4 out of 5 right now because I have a check-in with my advisor today. I feel more focused since I need to show her the progress I've made."* - B3

This example demonstrates how accountability created a sense of urgency that helped participants overcome inertia and maintain focus on their current task. The impending evaluation from their advisor provided external motivation that enhanced B3's ability to concentrate on coding. Similarly, B2 described a similar effect during the experience sampling phase of the study. Regular prompts to reflect on focus and productivity helped keep their attention anchored throughout the day:

> *"I did not use any real strategy to manage these distractions, though I found that constant check-ins made me more accountable for my progress."* - B2

This observation illustrates how this study's methodology inadvertently became a meta-strategy for time awareness and accountability. The regular prompts for self-reflection created a structure that helped B2 remain mindful of their productivity throughout the day.

Another commonly used external structure was body doubling—working in the presence of others to support focus. B6 described using this method during a co-working session: *"I was able to get focused through body doubling with a classmate."* The presence of another person engaged in work helped simulate a structured environment and provided informal accountability. Yet, body doubling was difficult to rely on consistently. Its success depended on others being physically present and similarly engaged, conditions that were often unpredictable in the self-directed, unstructured nature of doctoral programs.

Importantly, participants were not simply choosing unreliable collaborators. Rather, the nature of graduate work, marked by individualized timelines, variable workloads, and asynchronous commitments, meant that even the most well-intentioned peers were rarely available regularly. As B7 reflected:

> *"I thought two friends were going to join me at the office today... but neither of them has come in so I'm getting distracted a lot."* – B7

This breakdown reveals a broader issue: body doubling filled a gap left by institutional structures, offering external scaffolding for focus that accommodations alone did not provide. Yet its success depended on the availability and coordination of other students—peers who were also navigating irregular, demanding schedules. As a result, the method was often unstable, underscoring the lack of consistent, institutional alternatives to external accountability.

Technology played an important role in how participants managed attention, reduced distraction, and supported cognitive tasks. Some used apps to monitor and structure their digital behavior. For example, B1 relied on tools like OneSec and Qbserve to delay access to distracting content and track time spent on different activities. These tools provided feedback on usage patterns and helped create barriers to off-task behavior. Other participants adopted a more restrictive approach by removing access altogether. During a contextual inquiry session, B3 described using a minimalist mobile phone—referred to as a "dumb phone"—when working in the office to avoid the distractions of notifications and social media. The phone had no web browser or camera, limited navigation features, and a phonebook. Despite the inconvenience, they found the strategy helpful and continued to keep their smartphone at home during work hours.

Emerging technologies also supported participants in processing and retaining information. A4 described using Otter AI to transcribe meetings and interviews, which helped when attention drifted or when following conversations in real time became difficult. Participants also used tools like Workona and Jenni AI to manage online resources and generate content, supporting academic tasks that required sustained attention and organization. Some participants used technology to impose external limits on their behavior. B7, for example, reported using the SelfControl app to block distracting websites during periods of low focus. While not a complete solution, these tools created a structured digital environment and offered a form of external regulation when internal control was difficult to maintain.

Other participants strategically employed auditory interventions, including noise-cancelling headphones and rhythmic music, to mitigate sensory distractions and maintain cognitive focus. B1 reported that music facilitated dopamine stimulation and prevented attentional drift toward irrelevant content, while B4 implemented a combined approach of music with timed break intervals during writing sessions. These tools constituted elements of broader, self-developed systematic approaches designed to impose structure and reduce cognitive load. The prevalence of these practices underscores a significant finding from our research that participants independently developed adaptive strategies to manage focus requirements within demanding academic contexts without institutionalized support mechanisms for attention regulation and sensory processing differences.

Participants also employed behavioral strategies such as strategic task switching to preserve productivity. Rather than forcing themselves through low-focus periods, some chose to pivot tasks based on their current mental state. B6 described reframing what could have been an unproductive academic afternoon by shifting to a personal project:

> *"I'm still able to be productive, but not in my academics because I can't get in the right mood for it. So, I'm shifting [my attention] to my personal project, so I'm still making good progress, but on something else. I use the shifting of attention to manage distractions because it makes me feel productive, and thus, I don't feel like I'm wasting my time."* - B6

This approach demonstrates how B6 maintained a sense of momentum and accomplishment even when academic work felt inaccessible. By acknowledging their current limitations and redirecting their energy toward attainable goals, B6 preserved their overall productivity and positive self-perception while avoiding the frustration of trying to force focus on resistant tasks. Participants built buffer time into their schedules to support such flexibility in their workflow. B6 shared their preventative planning approach:

> *"I tend to make myself do things a day ahead of time so that when I feel like I don't have the executive function to finish it, I still have a day of buffer."* - B6

B6 was intentional in scheduling to accommodate fluctuations in focus and executive function, allowing them to meet deadlines despite variability in their cognitive state. This buffer was a form of self-compassion and planning grounded in realistic expectations about their attentional patterns.

Participants' adaptive strategies reflect their creativity and pragmatic need to reconcile doctoral demands with ADHD-related challenges. Doctoral work often involves unstructured time, abstract goals, and extended periods of focus—all areas where ADHD can present significant barriers. In response, participants constructed personalized systems combining external accountability, environmental control, behavioral flexibility, and technology. These systems allowed them to engage more effectively with their work, though not without trade-offs.

Notably, the effort to manage productivity was continuous and often invisible, representing an additional layer of labor embedded in their academic lives. Rather than simply trying to "work harder," these students found ways to work differently, reshaping their workflow to align with how their minds function best. Their adaptations show that productivity for doctoral students with ADHD is rooted in approaches tailored to their unique cognitive patterns and needs.

5 Discussion

Our findings extend prior work by showing how ADHD-related challenges manifest within unstructured, high-autonomy doctoral STEM environments. We frame these challenges as structural mismatches, drawing from disability studies literature. Participants' core difficulties stemmed not from ADHD itself, but from academic environments, especially in STEM, that failed to accommodate patterns like fluctuating attention, episodic motivation, and nonlinear productivity. Doctoral programs emphasize independence with minimal structure, leaving participants to manage their needs without institutional scaffolding.

Stigma further complicated access. Consistent with prior studies on disability invisibility in academia [6, 21, 34], our findings show how passive norms led students to mask difficulties and internalize failure. In addition, our study builds on existing research linking ADHD with executive function challenges [5, 10, 49]. Our methodology captured these challenges in real time, showing how they were compounded in PhD environments where timelines are vague, feedback is sparse, and accountability structures are minimal.

To cope, participants developed personalized systems including body doubling, environmental control, structured breaks, and digital tools. Many of these strategies are well-known in ADHD management studies [24, 25, 41, 44].

In sum, our findings show that while participants demonstrate exceptional adaptability through personalized coping strategies, they shoulder the dual burden of academic performance and structural navigation [11, 53]. This invisible labor—managing both their scholarly work and the conditions necessary for productivity—is a defining feature of the neurodivergent doctoral experience in STEM fields. The gap between institutional expectations and neurodivergent needs creates an inequitable academic landscape where success requires extensive self-accommodation work that remains largely unacknowledged in traditional metrics of academic achievement.

5.1 Implications for Institutional Policy and Technology Design

Participants created personalized systems to manage academic progress out of necessity. Institutional structures offered limited support, primarily focused on coursework rather than research demands. Participants relied on self-managed strategies to match neurotypical norms and expectations of a "typical" graduate student. Below, we offer implications for institutional policy and technology design that shift away from one-size-fits-all approaches and toward inclusive, responsive systems grounded in the realities of ADHD in doctoral work.

5.1.1 Institutional Policy Implications. Disability accommodations in doctoral programs must move beyond undergraduate-based accommodations [58, 59] to address the long-term, unstructured nature of doctoral research. Participants in our study did not always need extra time on exams; instead, they required flexible support for sustained research tasks, consistent mentorship, and accountability structures suited to nontraditional workflows. Policies should treat nonlinear productivity as a valid academic rhythm—for instance, through iterative goal-setting with advisors and regular check-ins framed as support rather than remediation. Faculty need training to recognize varied workflows as different expressions of capability rather than failures, aligning mentorship practices with neurodivergent students' strengths. For example, universities could allow flexible milestone deadlines, such as extending timelines for qualifying exams or dissertation proposals, helping students maintain progress without sacrificing well-being. Embedding disability-inclusive mentorship training into faculty development would equip advisors to support diverse work styles and directly challenge ableist assumptions about productivity. Finally, clear departmental messaging that promotes an access-friendly culture, openly discussing accommodation policies, and celebrating diverse academic trajectories, can reduce stigma and encourage students to seek support. Collectively, these measures foster an environment where neurodivergent work patterns are accepted and supported as legitimate routes to success.

5.1.2 Technology Design Implications. Our findings show that technologies to support should align with the cognitive patterns of participant students, such as fluctuating attention, motivation, and the unstructured nature of doctoral work, rather than enforce neurotypical workflows. Thus, tools should support irregular "episodic" engagement, enabling students to pause and resume tasks seamlessly without losing context. Equally important are distraction-aware interfaces—for instance, focus modes that mute notifications and reduce on-screen clutter to sustain attention during work bursts.

To provide external accountability, systems should build on existing virtual body doubling platforms [18] while adapting them for graduate education contexts. Key adaptations include asynchronous coworking features and ambient presence indicators that signal peer availability for spontaneous collaboration without requiring formal coordination or live interaction. Prior work such as LiteCo [61] explored how ambient signals can convey shared work context; our findings suggest similar mechanisms could support neurodivergent graduate students by providing low-friction cues for both accountability and connection.

Another priority is flexible progress tracking through adaptive milestone systems that can dynamically adjust deadlines and expectations based on real-time engagement patterns and stress indicators, moving beyond static goal-setting to respond to students' fluctuating cognitive states.

Additionally, AI/LLM-based tools like Claude AI's Computer Use tool could surface individual work rhythms and proactively suggest optimal timing for breaks or task-switching, helping students align their activities with their natural cognitive cycles.

Across these design directions, the emphasis is on augmenting the adaptive strategies students already use, rather than framing ADHD-related behaviors as deficits, thereby leveraging neurodivergent strengths to navigate misaligned academic environments.

6 Limitations

The small sample size (N=13), US-based STEM focus, and gender imbalance (predominantly non-male participants) limit how our findings may apply across cultural, disciplinary, or institutional contexts, particularly outside Western or STEM environments.

Participants self-reported formal ADHD diagnoses, and we did not require documentation of diagnoses. As such, students who are undiagnosed, self-diagnosed, or reluctant to disclose may face different challenges not captured here. Several participants had comorbid disabilities alongside ADHD. However, our study focused specifically on students whose primary diagnosis was ADHD and did not include those whose primary neurodivergent identity was autism, dyslexia, or other conditions, limiting the scope for cross-disability insights.

The mixed-methods design enriched our dataset, but it may have also introduced friction. Experience sampling messages could have interrupted participants' workflows, and our presence during contextual inquiry sessions may have influenced their typical behavior. Because interviews and self-reports are subject to recall and self-presentation biases, participants' accounts may not fully reflect their daily routines or internal experiences.

Finally, although all participants were in STEM fields, many challenges they described—such as task initiation difficulties, episodic productivity, and reliance on external scaffolding—may not be unique to STEM. We encourage future research comparing ADHD-related experiences across fields to explore these potential differences.

7 Conclusion

Our study examined how PhD students with ADHD navigate the structural inaccessibility of doctoral education. Through experience sampling, contextual inquiry, and interviews, we showed how institutional silence, inconsistent support, and rigid academic norms amplify the challenges students face. Participants developed resourceful strategies to manage fluctuating attention, motivation, and workflow, yet these strategies were often fragile, informal, and unsupported.

Rather than framing ADHD-related difficulties as individual shortcomings, we position them as access barriers that demand institutional change. We argue that meaningful inclusion for neurodivergent doctoral students requires shifting away from deficit-based accommodation models and toward structural redesigns of policies, mentoring practices, and adaptive technologies that reflect how students work. By recognizing and supporting diverse ways that PhD students with ADHD in STEM fields engage with doctoral research, institutions can move closer to realizing accessible, equitable graduate education.

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