The Struggle You Can't See

Experiences of Neurodivergent and Invisibly Disabled Students in Higher Education

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7. Curricular Support Strategies

Because much of the purpose of investigating students' experiences is to uncover barriers, this book so far may feel like simply a long list of problems. It is important to recognize that the issues these students face in higher education are numerous, and to the serious detriment of their educational experiences. This should not imply, however, that these problems are without solutions, or that educational institutions have made no attempts to date to address them. On the contrary, both students' narratives and other areas of the literature reveal promising practices that could be or have been implemented already. In some areas these practices are still emerging, and have yet to achieve their full potential, but even experimental attempts provide valuable ideas for paths forward.

This chapter will review examples of practices that students have suggested would be helpful, and strategies institutions have tried to meet their needs. These fall into four general categories, emerging from common themes across student narratives:

1. Needs for structural change at the university level that students may not have explicitly identified, but that are implicit in their experiences;
2. Proactive outreach and intervention by disability services and others;
3. Assistive technologies provided by the institution; and
4. Mentoring services from peers and others in the college or university.

While these are clear needs for a majority of students, the degree to which they have been addressed at educational institutions varies widely. Examples of some are nearly nonexistent in the literature, and

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others are well-established and -documented areas of practice. It should come as no surprise that the least progress has been made toward many of the more fundamental, structural changes, while substantial work has been done on simpler and less far-reaching interventions. Nonetheless, even small changes can have a significant impact for a struggling community, and even the most modest program that shows promise should be considered.

Implicit and Structural Needs

Time Flexibility and Beyond

There is scarcely any need to repeat the significance of the outsized time and effort demands placed upon invisibly disabled and neurodivergent students. This has been one of the most pervasive and critical themes observed throughout this work. How to address this issue, however, is a more complicated question, and one for which educational institutions have neither found a clear answer nor even, it seems, made significant progress in searching for one. If some students need more time than others, in order to complete their academic work and also to manage other time-consuming aspects of their lives, what can institutions reasonably do to give it to them?

In theory, flexible approaches to learning time would seem to be a potential solution, and one in line with the principles of Universal Design for Learning (UDL). For those unfamiliar, UDL is a framework for accessibility in education developed by the Center for Applied Special Technology (CAST). It derives from the Universal Design (UD) framework in architecture, which promotes collaborating with disabled people in architectural design processes to create buildings with access for all considered in their fundamental structure, rather than requiring cumbersome and ineffectual retrofits to compensate for accessibility barriers. UDL applies similar principles to education, encouraging educational designs that take difference into account from the beginning, provide flexibility and multiple pathways for learners, and recognize that the mechanics of instruction can and should be altered according to what will best facilitate learning for individuals. While UDL has seen more significant adoption in primary and secondary education,

where stricter legislation governs the inclusion of disabled students, it has begun to make inroads in higher education as well: Tobin and Behling (2018), for example, have contributed one prominent guide to practical application. Although CAST's guidelines for UDL recommend multiple aspects of flexibility (CAST, 2018), however, they do not mention altering the *time* that learners receive to process material and demonstrate their knowledge. Some educators may interpret leniency around time as an aspect of applied UDL, but the CAST guidelines do not explicitly call for it.

Of course, this may be for the very practical reason of keeping the guidelines from seeming impossible to implement. Primary, secondary, and higher education proceed on extremely regimented schedules in their own ways, which individual instructors have little ability to influence. Academic years, semesters, and quarters are set at the administrative level of the institution or even higher, at the level of local government, and for myriad reasons are not subject to change. Suggesting that students should be able to learn at their own pace, within these systems, would be more likely to result in educators rejecting the UDL framework outright as unfeasible, rather than any transformative change to their practice. This is also most likely partly why so little work has been done on investigating these types of approaches, in higher education or beyond.

With that said, within the literature around higher education, there have been some modest attempts to implement time flexibility in teaching, although these have generally been made by individual instructors within the confines of individual courses. A number of authors describe practicing and advocating flexible course deadlines with no penalties for late work, as a means of creating a caring campus environment and encouraging students' sense of belonging, largely in response to the COVID-19 pandemic (Kruger et al., 2022; Barnett & Cho, 2023; Kruger, 2023; Robinson et al., 2023), and sometimes in recognition of the same time inequities for disabled and neurodivergent students as have been noted here (Hills & Peacock, 2022). Other studies implementing similar strategies in courses have documented positive impacts of these on students' course success (Withington & Schroeder, 2017; Miller et al., 2019). Although these changes may be relatively

small, they represent a positive step, and it is also likely that far more faculty use similar practices than have published studies of them.

There is also at least one slightly more radical experiment to be noted: the FreeStartFreePace program at Dalarna University in Falun, Sweden, which authors describe as an example of 'flexible study pace' (Wissa & Avdic, 2017). This was an e-learning program that allowed students significantly more freedom than is traditional in when to start and complete courses, and was specifically implemented as a UDL-based, disability-oriented intervention. The authors reported some positive affective responses from students to the program, but also mixed results in terms of academic success—which may be at least as related to its online mode as to other factors, given students' variable success rates with online and face-to-face learning as noted in Chapter 4. It is difficult to say at the present moment how or if this structure could function in a face-to-face setting, for that matter. Even so, with care for the structure of the online learning environment, a time-flexible online alternative to time-rigid face-to-face instruction could be a better option than none at all. As this program was designed to accord with UDL principles, it can also serve as an example of Tobin & Behling's (2018) 'plus-one approach': working to ease just one common sticking point for students at a time, in recognition that improving learning design is an ongoing, iterative process (p. 134). Creating additional alternatives is often more valuable as well as more feasible than perfecting the accessibility of an entire course or program.

There might be more promise to report from this example, however, if the FreeStartFreePace program were still in place to this day, but from investigation of Dalarna University's current program information, it does not appear to be. Neither does any evidence seem to exist that any other institution has tried a similar approach since 2017. The challenges of the COVID-19 pandemic era may have deterred innovation in this area, at least temporarily, as has also seemed to be the cause of many Western institutions' waning interest in hosting massively open online courses (MOOCs), although these do continue to flourish in other parts of the world (Tlili et al., 2022). While individual instructors may explore time flexibility in individual courses, the standard academic term seems to remain overwhelmingly non-negotiable overall, and this still leaves students' time at the mercy of circumstance and which faculty members

they are lucky (or unlucky) enough to encounter. It is also unfortunate that this lack of imagination around academic terms exists when it comes to students who need more time, as the same is not true for students who want to spend *less* time: standard academic terms have certainly proven to be mutable before, but in the form of accelerated and block-plan schedules, for example, and not relaxed or extended schedules.

There are, however, legitimate reasons that extending students' time in college might not be desirable or beneficial. Students have a number of financial and personal pressures to finish college faster than not, including the costs that accumulate from college attendance and the delay of better employment opportunities available with a degree (Urban Institute, n.d.). At the very least, the financial burdens of university would need to be allayed before true time flexibility would be feasible from a student's perspective, at least in the U.S. and other nations where higher education is so costly. From an institutional perspective, meanwhile, there are additional incentives to graduate students within a traditional time frame, as in many cases official graduation rates for an institution are only calculated from student completion within these time frames. Even beyond this factor, evidence also suggests that taking longer to complete college reduces academic momentum, ultimately leading to a higher likelihood of attrition before graduating (Conway et al., 2021). This only decreases the attractiveness of allowing students more time in their academic programs, for both students and academic institutions.

At the same time, time struggles are real and severe for invisibly disabled and neurodivergent students as well as for other marginalized communities, negatively impacting both their academic work and their quality of life. Individual faculty members' efforts in individual courses to ameliorate them are a positive step and beneficial, but can only extend so far: faculty are also beholden to university schedules in ways that constrain how much flexibility they are really able to provide, and their workloads and course structure may suffer for trying to be more accommodating than a restrictive institutional-level calendar will allow. As many teaching faculty know intimately, even providing deadline extensions within a course can cause new stressors and bottlenecks of work for both the instructor and the student (Hewett et al., 2017). When only some faculty are attempting to provide flexibility, more flexible

courses may end up with reduced engagement in favor of those less flexible: for example, high-demand times in their other courses have been shown to be a cause of increased student absenteeism in class (Oldfield et al., 2018). Tobin and Behling (2018) also affirm that UDL cannot be fully achieved alone, and broad implementation of the framework is needed in order to make significant change (p. 145). Indeed, a potential remedy to the stated problems of providing only individual, constrained pockets of flexibility may lie in their tenth chapter, on creating a culture of UDL campus-wide. An entire institutional environment where staff and faculty have embraced the need to coordinate efforts to reduce students' time pressures could be tremendously beneficial—although no examples of such an environment seem to exist just yet. The example in Tobin and Behling (2018) of the University of South Dakota's cultural shift, however, demonstrates that it is possible to move an entire campus together toward widespread adoption of UDL principles. Could the principle of time flexibility not be added to them?

The concept of time poverty could provide a common language and framing for approaching such efforts. Giurge et al. (2020) put forward the notion of time poverty as an increasingly prevalent deficit of the time individuals have available relative to their responsibilities, which they find to be linked to poorer well-being, health, and productivity, even though being short of time may be socially normalized and even valorized. While these impacts occur on the individual level, furthermore, they note that time poverty results from numerous societal and systemic shifts beyond individuals' control, and in many cases may be linked to financial and material poverty. Time poverty is an emerging concept in the social sciences, and at an early stage of study; consequently, little data is available so far on its impacts across other strata of marginalization. Giurge et al. (2020), however, theorize that time poverty is likely to be more common within marginalized communities, and point to a need for more study and data collection in this area. Whillans and West (2022) continued this work by investigating time poverty and its impacts among the working poor, and found that any increase in available material resources, whether time-focused or not, helped to alleviate its impacts. They also identified pathways by which material poverty becomes a direct cause of time poverty: such as the fact

that study participants universally reported choosing to sacrifice time in favor of money (for example, never paying for time-saving services).

The demonstrated disadvantages neurodivergent and invisibly disabled students face, both in time and financial resources, should be sufficient to identify them as a time-impoverished population. Neither are they alone among college students, as recent early explorations into time poverty in higher education have shown. Most recently, time poverty has been found to be a factor in different educational outcomes by race and gender (Wladis et al., 2024), and student parents have also been identified as disproportionately time-impoverished compared to other students, with impacts also significantly varying by gender (Conway et al., 2021). In both cases, as with disabled and neurodivergent students, time poverty leads the population in question to expend a higher proportion of time on academic study rather than other aspects of life compared with other populations, often sacrificing time spent on activities needed for overall well-being. These effects are likely only compounded for crossovers of these groups, and by additional marginalized identities that individuals in any one group may hold. Gray (2021) even goes so far as to identify all writing students as a time-impoverished population, and investigates the intervention of a 'slow writing' instructional pace that would seek to reduce the pace of writing-intensive courses to improve outcomes—an approach that overlaps with the above discussion of time flexibility.

Conway et al. (2021), however, propose a bolder solution that may be more in line with the broader research on time poverty: including the alleviation of time poverty as a factor in financial aid decisions, along with increasing other campus resources that can relieve time and other forms of poverty. These may include campus interventions for food and housing insecurity, funding for materials and technologies needed for study, provision of child and other dependent care, and more. While, to the best of my knowledge, factoring time hardship alongside financial hardship in determining need for aid is a purely theoretical concept at this point, it is one that holds the potential to address time poverty in the ways that the research to date has indicated may be most beneficial. As Whillans and West's (2022) findings have suggested, having more financial resources in general would help address students' time poverty in a variety of ways: it would reduce the need to add outside

employment to students' already overloaded schedules, enable access to time-saving services and technologies, and reduce the stress and mental health pressures of precarity. It would also best serve a wide variety of student populations who disproportionately experience time poverty, well beyond invisibly disabled and neurodivergent students—as opposed to other, more gatekeeping possibilities, such as providing time-saving services as an accommodation for demonstrated disability. Indeed, the requirement to prove disability in order to qualify for accommodations is already a problematic and significant burden that it is similarly important to address.

Accommodations Documentation

In *Academic Ableism*, Dolmage (2018) clearly articulates the problem with required documentation for accommodations: it places the onus upon students to prove that they 'deserve' provisions to which they are in fact legally entitled under the ADA, and in effect presents a new barrier more than it enables access. Dolmage continues:

> There is a clear rhetoric in this accommodation discourse as well, an attitude of indifference toward the individual, and a refusal to provide support until this support is legally mandated. Following this process, the accommodations offered still demand that the student must accommodate him or herself to the dominant logic of classroom pedagogy. Once we begin to go down the road of accommodating disability, we are also admitting that dominant pedagogies privilege those who can most easily ignore their bodies, and those whose minds work the most like the minds of their teachers (likely meaning, as well, those who look much like their teachers). (p. 80)

Movement away from the accommodations-by-request model remains almost nonexistent in higher education, in spite of the inequities that Dolmage and other have shown it to exacerbate. Even movement away from onerous requirements for documentation has begun to occur only modestly. One critical development in this area has been the 2012 guidelines from the Association on Higher Education and Disability (AHEAD), which emphasize 'non-burdensome process' for students to obtain accommodations, underscore students' legal entitlement to a higher education that accommodates their disabilities, and, most importantly, recommend student self-report as the primary form of

documentation for making accommodations decisions (AHEAD, 2012). While this was a promising development in 2012, from the literature it appears to have been incorporated into actual disability services practice only gradually over the past decade. In recent years, however, disability services professionals have increasingly begun to follow the recommendation to rely more on student self-reporting, per the AHEAD guidelines but also as a matter of practical necessity throughout the COVID-19 pandemic, as the completeness of students' available medical records has decreased (Banerjee & Lalor, 2021). Axelrod et al. (2021), in particular, notably articulate the position in favor of this emerging practice, and its social justice orientation.

At the same time, significant pushback to this gradual progress has begun to manifest in the scholarly discourse. Banerjee and Lalor (2021), for example, argue that medical documentation is crucial to appropriate accommodations decisions and reduces the perceived risk of 'malingering' by students. This is a fear that unfortunately has been lent credence for some by the Varsity Blues college admissions scandal, where seeking extra time on examinations by students without diagnosed disabilities was reported as one mode of manipulating college admissions processes (Anderson, 2019). Moreover, a September 2022 special issue of *Psychological Injury & Law* was published entirely dedicated to promoting, if anything, *more* stringent requirements for medical documentation of disabilities in accommodations processes. Multiple articles in the issue make this argument explicitly in the name of protecting medical practitioners' role in (and income from) these processes, and Harrison (2022) additionally claims that seeking disability accommodations constitutes a 'victimhood industry' and that recent years have seen 'disability diagnoses become incentivized and encouraged' (p. 227). Other arguments in the issue include the notion that recognizing support needs beyond the most rigid diagnostic criteria for a specific disability is an act of pathologizing 'normal' variance in behavior, rather than a recognition of the ambiguities and continuum of impairment discussed in Chapter 2 (Suhr & Johnson, 2022). Similarly, other authors point to evidence that students tend to report experiences of academic dysfunction at higher rates than the same students actually meet clinical criteria for disabilities, which they interpret to imply that accommodations should be carefully guarded from all but students

who meet strict expert-evaluated criteria, rather than that a majority of students would be able to achieve more with more support and flexibility, regardless of the presence or absence of a clinical diagnosis (Weis & Waters, 2022). Across the full issue, a broad consensus is apparent that qualifying for disability accommodations grants students lucrative material benefits in higher education—an assumption rendered specious to say the least by many of the student narratives described in earlier chapters. Their arguments overwhelmingly reinforce the neoliberal and carceral attitudes that students have been shown to face and internalize in higher education, and that present such significant barriers to their equitable access to education: that they are not to be trusted as judges of their own experiences, that their challenges are to be minimalized and trivialized, and that they should always be considered suspect of malicious fraud in order to acquire unfair and undeserved advantages over their peers.

At the institutional level, the gradual increase in adherence to AHEAD's guidelines represents the most significant progress to date toward eliminating burdensome documentation requirements for disabled students, and it is extremely disheartening that even these modest gains have met with such aggressively reactionary responses. At the course level, however, as with time flexibility, individual faculty may choose not to require official documentation in order for students to receive what might be considered accommodations. In one practical example, an instructor chose to eliminate any need for official disability documentation in order to skip one examination without academic penalty, and found that this did not lead to more students than usual missing the exam (Norris & Wood, 2023). While this is a relatively modest modification, and uptake might have been different for offering more substantial assistance in the course, these findings do seem to tentatively contradict the narrative that any student would jump at the chance to falsely claim accommodations if they could. Guidance on UDL also highlights many other pathways by which faculty can make their classes more accessible for all, ideally rendering it a moot point which students qualify for accommodations and which do not; in fact, this is part of the core purpose of UDL (Tobin & Behling, 2018, pp. 44–45). In practice, however, while these individual efforts are better than none, UDL cannot truly achieve this purpose when implemented

only by select faculty in select circumstances. At least for now, qualifying for accommodations remains students' main source of leverage against faculty who resist more accessible practices, even if accommodations often do not live up to their full potential either. When even this much security can only be obtained through medical channels that can be arduous and costly, it is impossible to say that institutions are truly providing the accommodating environment to which students are entitled. In terms of the systemic change that is needed in this area, promising practices in many ways still have yet to be observed, and much more work toward broad implementation of UDL and similar practices is needed.

Assistive Technologies

In some of the less fundamental areas for change that students' narratives suggest, however, more significant steps have been taken. As briefly touched upon in Chapter 4, various types of assistive technologies are considered at least potentially beneficial and desirable for students across multiple categories.[1] Dyslexic students, for example, can greatly benefit from computer support and lookup capabilities, to help them with decoding and encoding written information.[2] Some dyslexic students also find audiobooks and class recordings to be beneficial, although they can also be the source of a number of logistical frustrations (Olofsson et al., 2012; Cipolla, 2018). Technological supports like reminder and scheduling features have been found to be helpful for students with TBI (Brown et al., 2017; Leopold et al., 2019) and those who are chronically ill (Ravert et al., 2017). As discussed in Chapter 4, out-of-class access or playback options for class materials are also very important to students across all categories, for managing memory, information processing, and other issues. Students have even indicated that perhaps the most important feature of assistive technology, over any specific functions, is the control that it provides them over how they engage with content (Pino & Mortari, 2014).

1 MacCullagh et al., 2016; Couzens et al., 2015; Brown et al., 2017; Accardo et al., 2019b; Clouder et al., 2020.

2 Olofsson et al., 2012; Wilson, 2012; Wennås Brante, 2013; Pirttimaa, 2015; Cipolla, 2018.

There have been a number of examples of assistive technologies offered by institutions as a disability support, although access is by no means universal. What is considered to constitute 'assistive technology' varies widely, as indicated by Jackson's (2023) broad dissertation study of implementations. The same study also found that assistive technology practices tend to depend on available funding and other resources for effectiveness, as well as program organization: centralized, coordinated initiatives from the leadership level of the institution tend to gain the most traction. Beyond simply providing the technology itself, training and support structures are also of critical importance, and current trends see institutions working to further reduce student barriers to technology access, as well as to implement technologies as part of UDL rather than as individual accommodations (Jackson, 2023).

With these trends in mind, a variety of examples can be found of specific cases where assistive technologies have been provided by an institution. There are several studies that describe offering access to assistive technologies free of additional charge through campus computer laboratories, located in libraries or elsewhere (Couzens et al., 2015; Taylor et al., 2016; Sharma, 2022), although in some cases these may only be accessible by providing medical documentation (Couzens et al., 2015). One particularly robust example of this model is the set of read-aloud and similar services provided through the Braille Unit at Visva-Bharati University Library Network in West Bengal (Sharma, 2022); while these services are primarily aimed at students with visual impairments, they can also be beneficial for invisibly disabled and neurodivergent students. Indeed, tests of the use of text-to-speech software with dyslexic students found that it can be used to increase reading speed to equal that of normal visual reading speed for nondisabled learners, with no loss of comprehension (Schneps et al., 2019). This would mean text-to-speech software could serve as a significant intervention for reducing the extra time and effort load of academic work for students in these areas, provided institutions could successfully facilitate access and training for the appropriate student groups. Similarly, as well, speech recognition software has been demonstrated to be beneficial for students who struggle with attention issues and written language encoding, as well as those who have physical difficulties with keyboarding (Nelson & Reynolds, 2015). This could also be a valuable support in which to invest.

While providing assistive technologies to students may carry an additional financial cost for institutions, as opposed to placing the onus on students to secure supports for themselves, in other respects it is also in the institution's best interest. Not only does it avoid the legal risk of noncompliance, providing assistive technologies proactively and from the earliest possible moment of students' transition helps to prevent attrition for those who require them to be successful (Bühler et al., 2020). For technologies to be implemented most effectively, however, may require a certain degree of readiness and self-efficacy on the part of the student users as well; Gould et al. (2022) offer an evaluation scale for these traits, through which staff can investigate what further interventions to develop them may be needed. Bühler et al. (2020) also describe several examples of large programs providing assistive technologies and training at points of transition, including the AccessSTEM program in the U.S. for STEM students, technology use training programs for transitioning students in Canada, funded government organizations and support systems to support technology needs in transitioning to the workplace in Germany, and funded and provided technology for transition entrance examinations in Israel.

Beyond alternative reading and writing methods, other types of relevant assistive technologies have also shown promise. Wearable self-monitoring systems, for example, have been found to help autistic students stay on task with academic engagement (Siko, 2018). Even software that carries no additional cost has been leveraged in some cases as assistive technologies. Examples include using cloud-based document collaboration to remove barriers to writing consultations (Keane & Russell, 2014), or simply providing guidance to free software and permitting the use of mobile devices as an assistive technology (Savvidou & Loizides, 2016). One faculty member even positioned a stuffed toy as an assistive technology, when passing it from student to student was used as a conversation management technique, in order to aid confidence and engagement as well as to serve as a fidget toy (Raye, 2017). While there is no data on specific student success impacts from any of these lower-investment options, in each case they garnered positive affective responses from students. Similarly, another study found that students may devise their own methods of using mobile devices and other personal technology as assistive technologies, especially students who are already likely to have relative technological affinity and facility,

such as mathematics majors (Armstrong & Gutica, 2020). Some of the observed techniques in this area included recording class sessions, adjusting the sensory aspects of course material, finding additional learning materials online to supplement course content, self-checking work, making recordings to reduce short-term memory demands and cognitive load, and using organizational tools. The authors, however, also emphasized that in most cases, learning these techniques was a matter of 'happy accidents' for students, rather than intentionally and evenly applied. These types of bootstrapping strategies are also available only to students whose instructors do not prohibit technology in the classroom, and while they may be time-saving in the long run, they add more initial time and effort for students already overloaded with both.

A final, particularly fascinating use case worked to address the meta level of students' other struggles with time and effort, specifically in navigating disability disclosure and accommodations processes: a participatory research project in which students and researchers co-developed an AI virtual assistant intended to simplify and operationalize these intimidating processes for students (Lister et al., 2021). As of trials in 2023, the digital assistant was showing significant promise as an alternative to unmediated form-filling for students navigating disability accommodations processes, and may have significant benefits to offer in the future if development continues (Iniesto et al., 2023).

Proactive Outreach and Intervention

Another need that students have repeatedly identified is for significantly more proactive outreach and intervention by campus units that serve disabled students. When the onus is on students to discover and seek out these services themselves, many students never gain access due to simple lack of awareness or initiative (Brazier, 2013; Rutherford, 2013). Autistic and psychiatrically disabled students have most frequently expressed the desire for disability services, as well as other campus services, to reach out more to students.[3] Information-seeking about

3 Pionke, 2017; Anderson et al., 2018; Miller et al., 2020; Anderson et al., 2020; Cage & Howes, 2020; Cox et al., 2021; Grabsch et al., 2021.

available supports also takes time and effort that these students can ill afford, and can paradoxically become a distraction from their academic work (James et al., 2020). Students have also particularly indicated the need for more proactive outreach and integration of disability services in online learning, where it tends to be especially unclear to students what might be available to them (Heindel, 2014; Bunch, 2016).

Rothwell and Shields (2021) describe one example of a disability services office employing proactive outreach, in the form of automatically scheduling students with disabilities into a series of advisory meetings over the fall semester. This model achieved promising results, but only provides proactive outreach to students who have submitted disability documentation, which may miss a majority of invisibly disabled and neurodivergent students who most need this intervention. Unfortunately, other proactive outreach approaches to students with disabilities are otherwise scarce, at least in the current literature. More generally, however, the most notable emerging model of proactive outreach services is in the area of academic advising practice, in the form of the intrusive advising model. While intrusive advising is not necessarily targeted at students with disabilities or neurodivergent students specifically, it is often framed as an intervention for populations at risk of attrition. Bryant (2022), for example, discusses it in the context of support for low-income first-generation students, who 'are typically overlooked as needing additional support as they often lack any visual indicators' of their status (p. 9)—another attribute, alongside risk of attrition, that of course invisibly disabled and neurodivergent students share. In fact, Morris Barr's (2019) dissertation specifically recommends intrusive advising as an intervention for students with ADHD, after finding that severity of ADHD symptoms also appears to correlate to attrition risk.

Evaluating 'intrusive advising' as a practice is challenging, because it is still an emerging area, and as with assistive technologies, definitions and approaches vary significantly by institution. The term is used to refer to a variety of practices across the literature, including: one-on-one advising that includes referrals to other academic support services like tutoring (Reader, 2018); working outside of class with students in a particular course or program, to set goals and develop skills (Thomas, 2020); immediate and interactive contact with advisors

during orientation, followed by advisors' regularly initiating contact to check in (Gianoutsos et al., 2021); or advisors monitoring students' progress for indicators of difficulty, maintaining control over students' enrollment processes earlier in the program and gradually releasing control over time, and providing a credit course targeted at building college readiness (Levinstein, 2018). Regardless of the specific form it may take, however, intrusive advising relies on strong advisor-advisee relationships, and its emphasis on proactive rather than passive support has been identified as beneficial for students averse to help-seeking, as well as those impacted by stereotype threat (Bryant, 2022). Positive impacts have also been noted from intrusive advising programs regardless of which practices they entail, from success in a particular course (Thomas, 2020) to improved retention.[4] It is difficult to establish which practices have had the greatest impact, however, given the wide variety in the approaches that have been studied.

Academic advising in general has also been presented as an intervention for neurodivergent students and those with invisible disabilities across a few studies. Incorporating elements of ADHD coaching into academic advising for students with ADHD has been identified as one promising practice (D'Alessio & Banerjee, 2016), and there is the potential for other similarly tailored approaches across different categories. Targeting advising specifically to disabled students' needs is particularly urgent, given that analysis of survey data has indicated students with disabilities generally perceive that they have less supportive interactions with academic advisors than students without disabilities (Zilvinskis et al., 2020). The perceived availability and listening behaviors of academic advisors have also been found to correlate to higher grades for students with learning disabilities and psychiatric disabilities, as have the quality of their interactions with advisors for students with psychiatric disabilities (Zilvinskis et al., 2023). It is clearly possible for academic advising to be one means of positive support for invisibly disabled and neurodivergent students, but to be most successful it may require particular care.

Beyond advising, as well, a few other variations on proactive outreach to students are in evidence in recent studies. These include personalized

4 Reader, 2018; Levinstein, 2018; Gianoutsos et al., 2021; Bryant, 2022.

phone outreach to students on a leave of absence, including referrals to campus services and other supports (Naylor et al., 2023), as well as proactively offering meal voucher cards to students who reported food insecurity experiences, demonstrated financial need, or both (Broton, 2023). The latter intervention in particular was found to correlate significantly to increased and more timely graduation rates, and the former study found students who were contacted were significantly more likely to return to study than those who were not. Both cases speak to important elements of any proactive outreach program: the value of human support and connections with the institution, and the importance of supporting students' needs beyond only academics. The broad reported effectiveness of proactive interventions regardless of the form they take, furthermore, should serve as an indicator that any similar, relationship-based programs institutions can create for disabled students would be likely to be beneficial, even if they may need to be relatively modest at first.

The value of these types of outreach to students points to a broader area of need, as well: more holistic, long-term, and individuated supportive relationships in general. Individualization is one of students' primary concerns with all accommodations, and particularly so when receiving help from university faculty and staff. It is a recurring theme across many narratives that one size definitely does not fit all in this area, and the more staff can work with students directly to create individually tailored structures of support, the better.[5] In some cases, students indicate that this is best accomplished by means of a long-term relationship with a dedicated support specialist (Hubbard, 2011; Toor et al., 2016). In others, students also express the desire for more communication between staff in relevant offices, and between staff and faculty, to remedy disconnects they observed between their accommodations, other services they received, and the classroom.[6]

Other types of support appear to be of most value to students when based around strong relationships, as well. While tutoring seems like

5 Heiney, 2011; Hubbard, 2011; Pino & Mortari, 2014; Van Hees et al., 2015; Stampoltzis, 2015; Brandt & McIntyre, 2016; Cai & Richdale, 2016; MacCullagh et al., 2016; Toor et al., 2016; Accardo et al., 2019a; Gurbuz et al., 2019; Scheef, 2019; Clouder et al., 2020.

6 Demery et al., 2012; Hong, 2015; Markoulakis & Kirsh, 2013; Conley et al., 2019.

a potential need for students with dyslexia and ADHD, in practice these students report ambivalent experiences of tutoring, with some finding it more effective and desirable, and others less (Gallo et al., 2014; Serry et al., 2018). Some students particularly note that their best outcomes with interpersonal academic support came from personal, individuated relationships and accountability partnering (Heiney, 2011; Kirwan & Leather, 2011). In dealing with their frequent challenges in student housing, autistic students also report finding it helpful to have relationship-based support and communication facilitation from resident assistants (Grabsch et al., 2021). In general, a relationship with any kind of familiar and trusted person can be a critical support for autistic students, and help to facilitate the student's success in other social interactions (Sayman, 2015). This is particularly important in the case of nonverbal autistic students, and those who use facilitated communication (Ashby & Causton-Theoharis, 2012).

Mentoring and Coaching

Another human support, mentoring, is particularly common for students to identify as valued or desired. This has been noted in an especially large number of studies of autistic students,[7] but also those of other categories,[8] including in online learning (Owens, 2020). Autistic students have been found to prefer specifically academic mentoring to any other type, however, and where it has been offered as an option, some reject social mentoring as potentially condescending and humiliating (Knott & Taylor, 2014). The value of mentoring is also not consistent across autistic student experiences, as some express ambivalence about the service (Anderson et al., 2018). Certain factors seem likely to make mentoring more successful for autistic students, such as focusing the goals of the mentoring on practical aspects of the transition to college (Clouder et al., 2020), and establishing clarity of purpose as well as interpersonal rapport in the mentor-mentee relationship (Simmeborn Fleischer, 2012). In some cases, mentorships by faculty also seem to be

7 Cullen, 2013; Knott & Taylor, 2014; Van Hees et al., 2015; Anderson et al., 2017; Sarrett, 2017; Vincent et al., 2017; Accardo et al., 2019b; Gurbuz et al., 2019; Scheef, 2019; Clouder et al., 2020; Cox et al., 2021.

8 Erten, 2011; Heiney, 2011; Randolph, 2012; Hong, 2015; Ravert et al., 2017.

more valued by autistic students than mentorships by peers (Accardo et al., 2019a; Accardo et al., 2019b), and faculty mentorships are especially valued by students across other categories as well (Timmerman & Mulvihill, 2015). This can be problematic, however, when so many faculty are contingent and may not be able to remain available for long-term relationships with students, and also when mentoring service is often given relatively little weight in faculty consideration for tenure and promotion.

Compared to some of the other areas of practice discussed in this chapter, mentoring and coaching services for disabled and neurodivergent students have a relatively robust history, and continue to grow. Formal evaluation and agreed-upon measures of impact are still not especially well-established, which limits the evidence basis for these practices, but there are nonetheless a number of promising examples represented in the literature. Most of these can be organized into a few main types of program:

- **General mentoring programs for students with any type of disability.** Even in these, in the available studies, mentees most commonly are autistic, have ADHD, have what are identified as 'learning disabilities' (whether these are also identified more specifically or not), or have psychiatric disabilities. For the most part, these appear to be peer mentorship programs (Hillier et al., 2019; Lombardi et al., 2020; Krisi & Nagar, 2021), although there is at least one described case where faculty served as mentors (Markle et al., 2017), and one where psychology graduate students served as consultants (Button et al., 2019).
- **Peer mentorship for autistic students.** Programs focused on autistic students as mentees, and sometimes also as mentors, appear to be significantly more represented in the literature than any other.[9]
- **Coaching for ADHD, other categories classified under learning disabilities, or both.** These include both the

9 Suciu, 2014; Ames et al., 2016; Roberts & Birmingham, 2017; English, 2018; Thompson et al., 2018; Trevisan et al., 2021; Mapes & Cavell, 2023.

employment of professional coaches, and peer coaching.[10] Coaching is a well-established intervention for ADHD that has been in use since the 1990s, although empirical evaluation has mainly started to appear in studies from the last decade. A 2018 literature review of nineteen studies found evidence of positive impact on reported ADHD symptom experiences, self-esteem, quality of life, and participant satisfaction (Ahmann et al., 2018).

- **STEM-specific programs.** Designed to encourage more students with disabilities to pursue study and careers in STEM, these programs typically include those with all types of disability, and mentors are either student peers or volunteers who work in STEM professions (Gregg et al., 2016 & 2017; Dunn et al., 2021; Kreider et al., 2023).

One other relevant mentoring program, which did not fit into any of these categories, is a near-peer mentoring program for students with mental health concerns and a history of foster care experiences (Blakeslee et al., 2020).

Overall, there appear to be a few common key factors in the success of these programs. One of these is substantial training, support, and clinical supervision for mentors, whether through disability services offices or other campus units like counseling centers.[11] Training in both the characteristics of relevant disabilities and mentorship strategies, as well as supervision and accountability systems, were considered a requirement for mentors across most programs and were also appreciated by mentors, especially student mentors. The importance of relationship-building and trust to successful mentoring was also stressed by participants in several studies (Roberts & Birmingham, 2017; Hillier et al., 2019; Kreider et al., 2023), including setting boundaries and mentor-mentee agreements (Saviet & Ahmann, 2020). Where mentors and mentees struggled to develop a strong relationship, this also became a barrier to positive outcomes (Roberts & Birmingham,

10 Richman et al., 2014; Farmer et al., 2015; Michael, 2016; Bomar, 2017; Prevatt et al., 2017; Ahmann et al., 2018; Stark et al., 2023.

11 Roberts & Birmingham, 2017; Thompson et al., 2018; Trevisan et al., 2021; Cardinot & Flynn, 2022.

2017; Thompson et al., 2018; Cardinot & Flynn, 2022). Similarly, mentor-mentee collaboration in setting goals and strategies was found to be the most successful approach.[12] Another critical factor appears to be strong structure and accountability for mentees as well as mentors;[13] when mentees were not actively engaged in a structured way by their mentors, but only encouraged to reach out as needed, very little mentoring ultimately took place, even though participants still expressed appreciation for having the option to seek help (English, 2018).

In general, regardless of the specific program characteristics, across studies mentees report overwhelmingly positive experiences and benefits. In some cases these were only identified as generally positive perceived impacts (Ames et al., 2016; Michael, 2016; Mapes & Cavell, 2023), while in others they tended to fall into several specific areas:

- Increased institutional awareness and knowledge, including how to better navigate processes and access supports;[14]
- Improved communication and social skills, mainly reported in programs for autistic students;[15]
- Increased self-determination and self-advocacy;[16]
- Improved planning, organizational, and study skills, mainly reported in programs for students with ADHD and learning disabilities;[17]
- Improved executive function, mainly reported in programs for students with ADHD and learning disabilities (Richman et al., 2014; Stark et al., 2023); and
- Increased metacognitive skills (Thompson et al., 2018; Stark et al., 2023)

12 Prevatt et al., 2017; Thompson et al., 2018; Kreider et al., 2023; Stark et al., 2023.
13 Prevatt et al., 2017; Saviet & Ahmann, 2020; Cardinot & Flynn, 2022; Kreider et al., 2023.
14 Suciu, 2014; Hillier et al., 2019; Trevisan et al., 2021; Cardinot & Flynn, 2022.
15 Suciu, 2014; Thompson et al., 2018; Trevisan et al., 2021; Cardinot & Flynn, 2022.
16 Richman et al., 2014; Farmer et al., 2015; Gregg et al., 2016 & 2017; Bomar, 2017; Thompson et al., 2018; Blakeslee et al., 2020; Trevisan et al., 2021; Stark et al., 2023.
17 Gregg et al., 2016; Prevatt et al., 2017; Bomar, 2017; Hillier et al., 2019; Trevisan et al., 2021; Cardinot & Flynn, 2022; Stark et al., 2023.

Given that many of these skills have been identified as critical needs for success through the preceding literature on student experiences, these reported results deserve careful attention. It is also worthwhile to note, however, that multiple studies have also examined mentees' GPA and other tangible academic performance measures for evidence of impact from mentoring programs, and consistently no significant change has been observed (Hillier et al., 2019; Blakeslee et al., 2020; Lombardi et al., 2020). There are many potential explanations for this discrepancy between quantitative data and students' self-reported outcomes, which may have more or less promising implications. Regardless of the reason, however, purely on the basis of students' positive responses to mentoring programs and other students' expressed desire for them in their narratives, these approaches do still very much seem to have significant potential value, even if further investigation may be warranted.

Mentorship programs also have other frequently reported benefits, furthermore, for the mentors. Overwhelmingly, regardless of the program structure or their roles otherwise, mentors report highly positive experiences with participating. A number of specific benefits are also commonly reported: increased knowledge and awareness about relevant disabilities (Suciu, 2014; Thompson et al., 2018; Trevisan et al., 2021); personal growth in self-esteem, self-efficacy, professional preparation and commitment; and similar areas (Krisi & Nagar, 2021; Trevisan et al., 2021; Cardinot & Flynn, 2022); increased empathy, and improved communication skills (Cardinot & Flynn, 2022). Faculty members who served as mentors in Markle et al. (2017) also experienced their training and participation as valuable professional development, significantly increasing their perceived preparation to work with disabled students in the classroom. In some cases, peer mentors were also other disabled or neurodivergent students (Hillier et al., 2019; Dunn et al., 2021), meaning that the programs afforded these student populations the benefits of both roles. Indeed, the highest satisfaction rates with the program described by Dunn et al. (2021) were in cases where students had the opportunity to be both mentee and mentor at different stages and with different peer groups. To maximize the benefits of mentoring for disabled students, the potential of these bilateral impacts should not be overlooked.

It should also be noted that a likely contributor to these programs' popularity is that many institutions have been able to implement them with relatively minimal resources. By far the most recurring model in the literature for mentoring programs is with volunteer mentors, most commonly undergraduate peer mentors, trained and supervised by campus disability services offices.[18] Similarly, faculty members in Markle et al. (2017) served on a volunteer basis, as a form of service. The next most common model is the employment of doctoral students in relevant disciplines as clinicians (whether paid or unpaid is generally unclear), with supervision and support from campus professionals and offices, such as counseling services.[19] Both of these models do cost staff time from frequently understaffed and overworked campus units, which is certainly not an inconsiderable resource demand, but for the most part they rely on volunteer labor and do not carry the additional budget requirements of interventions like assistive technologies, for example. Even in cases with larger budgets, programs appear to be resourced and administered through existing national programs (Michael, 2016; Dunn et al., 2021), or funded by grants and donors (Ames et al., 2016; Kreider et al., 2023). In one example, a fee-based service was provided by a center at the university (Mapes & Cavell, 2023), but for the most part programs have been able to be offered at no additional cost to students, which is generally preferable for reasons of equity. It is encouraging that programs that have been reported as so beneficial have been able to be implemented relatively inexpensively, given that this helps to make them both more approachable to staff and more accessible to students.

Summary and Conclusions

A great deal more work will be needed to make changes to major structural issues in higher education, such as students' challenges around time pressures and documentation for accommodations. There are, however, some potential directions to consider, including evaluating time poverty as an element of need for financial aid, advocating for

18 Suciu, 2014; Gregg et al., 2016/2017; Roberts & Birmingham, 2017; English, 2018; Hillier et al., 2019; Lombardi et al., 2020; Trevisan et al., 2021; Krisi & Nagar, 2021; Cardinot & Flynn, 2022.

19 Prevatt et al., 2017; Thompson et al., 2018; Button et al., 2019; Stark et al., 2023.

continued and increased adherence to the 2012 AHEAD guidelines on granting accommodations, and pushing forward campus cultures of UDL. Furthermore, in some less fundamental areas of practice, promising examples already exist that indicate worthwhile directions to pursue. Models of intrusive academic advising already in use could act as templates for, or be married with, proactive outreach by campus disability services offices. There is significant potential in making existing assistive technologies available to students, and more still may be found in co-developing further technological solutions with the students who need them most. Mentoring and coaching programs are already well-established for various student groups across multiple institutions, and they have a record of highly positive outcomes, including greater student confidence in many of the exact areas that have been identified by their narratives as most crucial to success. Though no one intervention will be a single solution to every problem invisibly disabled and neurodivergent students face, each one that is successfully implemented will incrementally improve these students' experiences. This is a worthwhile pursuit in itself, even as we work toward more systemic changes that will address the larger issues.

The interventions discussed in this chapter are primarily aimed at addressing students' academic needs, which is of course an extremely important part of the higher education experience. It is not the only part, however, and in many ways students' lives outside of the curriculum are just as critical to improve, and sometimes even more so. The next chapter will examine strategies for intervention outside of factors that bear on the curriculum directly, and explore what the most promising directions for these areas may be.