The Struggle You Can't See

Experiences of Neurodivergent and Invisibly Disabled Students in Higher Education

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4. Curriculum and Classroom

Academic courses are the center of college and university life, around which many other elements are organized. Progressing through course work is ostensibly the main purpose of students' enrollment, regardless of what larger goals that work may serve. As discussed in Chapter 3, course work places major demands on the time and effort of neurodivergent and invisibly disabled students, often to the exclusion of social and other life activities. The factors that support and inhibit students' success in their courses, therefore, are some of the most important in higher education overall. Furthermore, in student accounts of their experiences in higher education, a large number of the issues and needs they most commonly note have to do with faculty relations, study, and other aspects of their course-based academic work.

In this chapter, the focus will be on aspects of the curriculum and classroom, particularly those that neurodivergent students and those with invisible disabilities most commonly report finding valuable or difficult to manage. There is a wide array of factors to consider, but most fall roughly into three categories:

1. The attitudes, behavior, and interventions of faculty;
2. Students' commonly reported academic strengths and weaknesses; and
3. Elements of course design that bear on students' needs.

While this chapter by no means exhaustively addresses accessibility concerns in course design, the issues highlighted are those that seem to recur the most frequently in student narratives of their experiences.

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Faculty Attitudes and Support

Experiences with faculty dominate students' narratives of their higher education experiences, not surprisingly. Faculty play a critical role in students' success in college, and how a given faculty member relates to students can be vital in how a student experiences one course, or even an entire subject. It is concerning, therefore, that so many students' narratives describe profoundly negative incidents with course faculty. Students frequently report encountering faculty members who seem to have little awareness of disabilities in general, invisible disabilities in particular, or the student's specific condition or neurodivergence.[1] Negative attitudes held by faculty toward students with disabilities are also frequently reported, whether these were perceived by students or otherwise.[2] For example, Giroux et al. (2016) found that past surveys had identified patterns of negative attitudes toward students with chronic illnesses by faculty members. Students also frequently report experiences with faculty members who were reluctant to comply with their requests for accommodations, refused to provide the supports to which students were legally entitled, would not provide any flexibility with format and structural elements of course assignments, or combinations of these.[3] In some cases, faculty cited 'unfairness' to other students as a reason for the refusal, indicating a lack of understanding of the purpose and nature of accommodations (Pino & Mortari, 2014; Kreider et al., 2015; Giroux et al., 2016). Faculty are also frequently experienced as unresponsive and unsupportive when students make accommodation requests, sometimes simply because of overwork or lack of availability.[4] A number of studies also found these types of issues

1 Erten, 2011; Randolph, 2012; Mullins & Preyde, 2013; Redpath et al., 2013; Heindel, 2014; Stampoltzis, 2015; Sarrett, 2017; Winberg et al., 2019; Accardo et al., 2019b; Clouder et al., 2020; Turosak & Siwierka, 2021.

2 Erten, 2011; Gallo et al., 2014; Pino & Mortari, 2014; Hong, 2015; Pirttimaa, 2015; Stampoltzis, 2015; Turosak & Siwierka, 2021.

3 Hubbard, 2011; J.B. Roberts et al., 2011; Randolph, 2012; Mullins & Preyde, 2013; Redpath et al., 2013; Catalano, 2014; Pino & Mortari, 2014; Pirttimaa, 2015; Stampoltzis, 2015; Strnadova et al., 2015; Sokal & Desjardins, 2016; Lizotte, 2018; Winberg et al., 2019; Accardo et al., 2019b; Pfeifer et al., 2021.

4 Hadley & Satterfield, 2013; Rutherford, 2013; Gallo et al., 2014; Pino & Mortari, 2014; Sokal & Desjardins, 2016; White et al., 2016; Lightfoot et al., 2018; Accardo et al., 2019b; Clouder et al., 2020; Cox et al., 2021; Pfeifer et al., 2021.

to be a significant factor in dealing with academic support staff, such as advisors (Markoulakis & Kirsh, 2013; Hong, 2015; Woof, 2021).

In many cases, moreover, a faculty member who is unsupportive or who hesitates to implement accommodations may be exhibiting some of the least negative behavior that students encounter. Student narratives across many studies also describe experiences of disclosing a disability or neurodivergence to faculty or staff, and receiving a response that was stigmatizing, discriminatory, or even abusive.[5] A student in Houman and Stapley (2013), for example, describes an experience where a faculty member was vocally critical during class of the student's appearance of illness and exhaustion, even when the student had previously disclosed a chronic health condition with fatigue as a symptom.

A nonverbal autistic student in Ashby and Causton-Theoharis (2012) who uses facilitated communication described a particularly egregious incident:

> While he was not the only one to question her typing, this professor actually included the practice of facilitated communication as an example of a "bizarre belief." When I asked her to explain how she knew her faculty did not believe in her typing she responded, "It was not hard to tell. One teacher included it in the curriculum. FC as bizarre." (p. 274)

Especially for students with psychiatric disabilities, encounters with teaching faculty in some cases can be so demeaning, humiliating, and antagonistic that they trigger psychiatric symptoms and avoidance of academic coursework (Hubbard, 2011; Hong, 2015; Giroux et al., 2020).

The many demoralizing experiences that students describe are particularly frustrating because their positive experiences have an equally dramatic impact. When faculty and staff are supportive and compassionate, those experiences are transformatively valuable for students, just as negative experiences can be debilitating.[6] Students in

5 Heiney, 2011; Ashby & Causton-Theoharis, 2012; Habib et al., 2012; Wilson, 2012; Markoulakis & Kirsh, 2013; Gallo et al., 2014; Doikou-Avlidou, 2015; Kreider et al., 2015; Pirttimaa, 2015; Timmerman & Mulvihill, 2015; Brandt & McIntyre, 2016; Anderson et al., 2018; Bolourian et al., 2018; Hoffman et al., 2019; Kain et al., 2019; Zeedyk, 2019; Clouder et al., 2020; Giroux et al., 2020; Pfeifer et al., 2021; Thompson, 2021; Turosak & Siwierka, 2021.

6 Heiney, 2011; Randolph, 2012; Wilson, 2012; Rutherford, 2013; Schindler & Kietz, 2013; Gelbar et al., 2014; Pino & Mortari, 2014; Strnadova et al., 2015; Childers & Hux, 2016; Giroux et al., 2016; LeGary, 2017; Smith, 2017; Cipolla, 2018; Colclough, 2018; Lightfoot et al., 2018; Serry et al., 2018; Ward & Webster, 2018; Kain et al.,

some studies have cited supportive faculty as a major factor in their academic success (Ward & Webster, 2018; Kutscher & Tuckwiller, 2019). Students in Smith (2017) mention supportive faculty as a valued source of emotional support, as well as academic, and students in Colclough (2018) make particular note of the beneficial effects of positive relationships with faculty. Overwhelmingly, faculty support is consistently listed as one of the most valued supports for students, while unsupportive and obstructive faculty are consistently listed as one of the most significant barriers. It is not an exaggeration to say that how faculty and staff respond to students can make or break those students' experiences of a course, a subject, or university as a whole. The fact that so many miss this chance to directly support student success is therefore extremely disappointing.

Many of these issues are exacerbated by the common requirement in higher education that students with accommodations present these to faculty personally for negotiation, without the buffer of disability services staff. There are certainly reasons that institutions have made the choice to implement this requirement, and not all of them stem from underfunded, understaffed, and otherwise under-resourced disability services offices. In theory, engaging faculty in these conversations could help students to build important skills in self-advocacy, as well as a greater understanding of their own needs through having to repeatedly articulate them. In practice, however, many factors confound the good intentions behind making students their own advocates, as has been noted in the previous chapter. For many students, particularly those who are neurodivergent or invisibly disabled in the ways addressed here, these interactions represent extremely anxiety-producing communication challenges (Rutherford, 2013; Pfeifer et al., 2021), especially for autistic students (Cai & Richdale, 2016). As noted in Kreider et al. (2015), many students feel that the need to self-disclose to faculty constitutes requiring them to disclose private medical information to faculty in order to access their allotted supports. This perception can be exacerbated by faculty and staff who are invasive and inappropriate in follow-up questioning (Heindel, 2014; Zeedyk, 2019), or who are inattentive to confidentiality in discussing accommodations with students, such as mentioning their

2019; Kutscher & Tuckwiller, 2019; Lipka et al., 2019; Anderson et al., 2020; Giroux et al., 2020; Owens, 2020; Cox et al., 2021; Pfeifer et al., 2021.

conditions or support needs in front of classmates without permission (Melara, 2012; Pfeifer et al., 2021). Put together, all of these concerns make approaching faculty about course accommodations a major emotional barrier, one that students tend to avoid as much as possible, choosing instead to muddle through without even the accommodations to which they are formally entitled (Melara, 2012; Kreider et al., 2015; Stampoltzis, 2015). Negative experiences with faculty regarding their support needs also tend to make neurodivergent and invisibly disabled students less likely to approach those faculty for help outside of class, deterring them from types of academic support that would normally be available to any student (Gallo et al., 2014).

Beyond these most significant issues around faculty attitudes and behavior, there are also more minor logistical improvements faculty could make to their course management to increase support. For example, students also frequently mention the value they place on faculty feedback. A number of students agree that feedback from an instructor on their academic work is extremely important to them, but that the feedback they do receive is frequently insufficient to be helpful (LeGary, 2017; Smith, 2017; Jansen et al., 2018). Another area where more instructor intervention would be beneficial is in the implementation of group projects. Group work can be highly beneficial for students with all types of learning needs, as students themselves recognize (if sometimes reluctantly) in their narratives (Tarallo, 2012; Stampoltzis, 2015; Harn et al., 2019). In some cases, it may even serve as a support in itself: for example, students with ADHD in Flowers (2012) indicated that they were able to be most successful in classes where they could engage in group work, as opposed to those in a lecture format. As noted in Chapter 3, however, the excessive and frequently unpredictable time demands on neurodivergent students and those with invisible disabilities can make it difficult to keep pace with a group of their peers, which may lead to misunderstandings, tensions, and resentment if not properly managed (Kreider et al., 2015; Pirttimaa, 2015; Stampoltzis, 2015). Autistic students and those with psychiatric disabilities are also more likely to have difficulty with the social components of group projects, making these experiences more difficult and uncomfortable

to navigate without assistance.[7] While this does not mean that group work ought to be eliminated entirely, particularly given its positive effects, it does mean that it needs to be implemented with great care and thoughtfulness to mitigate potential negative impacts for the more vulnerable members of the class. Indeed, as suggested by Cullen (2013) and demonstrated in Gelbar et al. (2014), the class may be best served by faculty support and even direct intervention in project groups, to ensure their smooth functioning.

Academic Strengths and Weaknesses

Information Processing Challenges

Absorbing, interpreting, and communicating information effectively is ascribed critical importance in higher education, which makes it a significant disadvantage that students in several categories particularly struggle with these tasks. Information processing issues are a common theme across student narratives, and are due to technical challenges of their impairments, rather than any lack of aptitude or effort. Dyslexic students, as one might assume, mostly report struggles with heavy reading and writing requirements in higher education courses, and, even with various types of support, reading and writing are still more time-consuming and cumbersome for them than for other students.[8] This problem is exacerbated by how higher education assignments often unthinkingly default to the written word as a means of disseminating and evaluating learning, even when reading and writing skills are not the core content to be learned, and other delivery modes might be just as effective (Mullins & Preyde, 2013). For example, group work can be a very helpful learning practice for these students (Clouder et al., 2020), and options to take examinations orally can be helpful as well, although in some cases this depends on the individual student (Stampoltzis, 2015; Serry et al., 2018).

7 Tarallo, 2012; Cullen, 2013; Rutherford, 2013; Knott & Taylor, 2014; Kent, 2015; Cai & Richdale, 2016; Toor et al., 2016; Anderson et al., 2017; Gurbuz et al., 2019; Harn et al., 2019.

8 Hadley & Satterfield, 2013; Pino & Mortari, 2014; MacCullagh et al., 2016; Hadley, 2017; Maurer-Smolder et al., 2021; Richardson, 2021.

Autistic students, meanwhile, report a more varied set of challenges with taking in information. Some autistic students report auditory processing issues,[9] while others struggle with navigating neurotypical-centric structures of information. Some of the challenges described in this area include difficulty interpreting information that is not organized according to an explicit structure (Jansen et al., 2018), and difficulty determining the relative importance and context of information (Jansen et al., 2018; Clouder et al., 2020). Similarly, autistic students may tend to take in more information less discriminatingly than their neurotypical counterparts, struggling more to filter out irrelevant information in class materials and academic environments (Everhart & Escobar, 2018). They may also find that they think and understand in particularly linear and literal ways that are sometimes incompatible with their academic requirements (Cox et al., 2021).

Students with ADHD also report a similar variety of issues with absorbing and expressing information. Participants in several studies report needing extra time to process information in general (Hubbard, 2011; Catalano, 2014; James et al., 2020), as well as difficulties and discomfort with expressing their thoughts in writing (Hubbard, 2011; Catalano, 2014). Some students with ADHD also report issues with communication in general (Melara, 2012; Wright, 2011), although in other cases their self-assessments are more variable (Hubbard, 2011). In still other cases, furthermore, students with ADHD actually find that their tendency to ruminate on abstract concepts at length can be to their academic benefit, especially in STEM fields—although this still presumes that they actually have time for this additional processing, which is not always the case (James et al., 2020).

Information processing issues are also common among students with traumatic brain injuries (TBI). Even across a variety of different personal backgrounds and types of brain injuries, students with TBI frequently report taking longer to think and process information than average (Bush et al., 2011; Childers & Hux, 2016; Owens, 2020), as well as struggling to process oral and visual information (Gotschall & Young, 2017; Owens, 2020). Some also experience difficulties with communication, whether these are noted by the students themselves or

9 Van Hees et al., 2015; Jansen et al., 2018; Anderson et al., 2020; Clouder et al., 2020.

by others (Bush et al., 2011; Owens, 2020). Interviews with a group of specifically female students with TBI also revealed post-injury difficulty with analyzing information, and with expressing themselves in writing (Gottschall & Young, 2017). All of these challenges, like those reported by students in other categories, present significant additional barriers to completing academic work.

Note-taking, for example, represents one specific academic task that is made significantly more difficult by these issues. Taking notes in class is a skill dyslexic students report finding especially difficult, and where accommodations are needed.[10] Not all students who need these supports receive them, however, and even when they are available, their perceived helpfulness may be questionable (Serry et al., 2018). Some students also specifically mention access to video or audio lecture recordings as beneficial in working around note-taking challenges (Pino & Mortari, 2014; Stampoltzis, 2015; Maurer-Smolder et al., 2021). Taking notes on course readings is challenging as well, and some students find they need to digitize print readings, or print digital readings, in order to take notes and manipulate these materials in the ways that they need (MacCullagh et al., 2016). A number of autistic students also report struggling with note-taking and needing support (Anderson et al., 2017; Accardo et al., 2019a; Accardo et al., 2019b), but how these services are delivered can affect their helpfulness (Accardo et al., 2019a).

Another common and related area of difficulty is with working memory, particularly in students with dyslexia, ADHD, or both concurrently. ADHD and dyslexia overlap significantly in how memory affects academic performance, and not least because it is fairly common for a student to be diagnosed with both. Students report specific difficulties with storage and recall of information (Cameron, 2016), as well as focus and motivation issues, especially in long classes or when completing long readings.[11] Many students also report using strategies to employ visual, aural, and other sensory forms of memory in order to compensate for these difficulties,[12] while others express a desire to learn these types of strategies (Serry et al., 2018). Numerous students

10 Olofsson et al., 2012; Pino & Mortari, 2014; Stampoltzis, 2015; MacCullagh et al., 2016; Smith, 2017; Clouder et al., 2020; Maurer-Smolder et al., 2021.

11 Wennås Brante, 2013; MacCullagh et al., 2016; Serry et al., 2018; Richardson, 2021.

12 Wilson, 2012; Pirttimaa, 2015; Cipolla, 2018; Richardson, 2021.

also mention the value of having the technological ability to adjust the speed at which information is presented, such as being able to slow down or pause a lecture recording, to help with memory issues (Pino & Mortari, 2014; MacCullagh et al., 2016; Maurer-Smolder et al., 2021). Similarly, students also report difficulties with organization in study and classwork, and using visual, aural, kinetic, and practical strategies to compensate, such as color-coding, flow-charting, and technological means of staying organized.[13] These difficulties are significant enough, however, that dyslexic students also report difficulty navigating other systems of organization on campus, such as academic libraries (Redpath et al., 2013; Stampoltzis, 2015). More often than dyslexic students, meanwhile, students with ADHD describe difficulties with executive function, focus, and memory. These include initiating work and staying on task, maintaining focus, and staying organized.[14] This seems to be especially true in online courses (J.B. Roberts et al., 2011). Some students also describe issues with short-term memory and forgetfulness, which may be related to distractibility (Hubbard, 2011; Melara, 2012; Schaffer, 2013).

Cycling, Variable, and Invisible Conditions

Many of the impairments under discussion here are not consistent over time in how much they impact students' lives. A chronically ill student may have a few weeks of significantly improved health and then a few of entirely disabling pain and fatigue, for example, or a student with ADHD may find their symptoms and needs have shifted significantly with maturation from what they were in secondary schooling, or a student with psychiatric disabilities may be well one day and unable to get out of bed the next. Students across multiple categories describe experiencing these variable patterns, although they are most commonly reported by those with psychiatric disabilities and chronic illness.[15] As one chronically ill student described it:

13 Pino & Mortari, 2014; Stampoltzis, 2015; Cameron & Greenland, 2021; Maurer-Smolder et al., 2021.

14 Hubbard, 2011; Roberts, 2011; Wright, S.A., 2011; Melara, 2012; Schaffer, 2013; Lefler et al., 2016; Kwon et al., 2018; James et al., 2020.

15 Mullins & Preyde, 2013; Ennals et al., 2015; Giroux et al., 2020; Toller & Farrimond, 2021; Turosak & Siwierka, 2021.

> Even if I plan and break everything down and stuff, I can just have a random week out of nowhere I can't do any work and I can't control that [...] it can be quite difficult emotionally, like not having that control and not being able to do anything about it. (Toller & Farrimond, 2021, under section header "The chronically ill body: a barrier to studying").

This can be especially problematic because these experiences are mismatched with nondisabled people's common understandings of disability, which tend to view impairment as something that either exists or does not, and is fixed and unchangeable. Even more obvious types of impairment, like those of mobility or vision and hearing, are often more complex than this construction allows, and neurodivergent and invisibly disabled people tend to experience even more unpredictability in their conditions than others. This can make it difficult to plan and commit to an entire semester's worth of uninterrupted work, and forces students into often taxing and suboptimal study patterns to compensate. For example, students may have to adjust their coping and study strategies multiple times a semester to manage the cycling of their symptoms, or work in a 'boom and bust' pattern of intense academic work during periods of lighter symptoms, followed by periods of decline and incapacity afterward—which may be partly triggered by the previous exhaustion and overwork (Toller & Farrimond, 2021). The unpredictability of these conditions may also lead to conflict with faculty, staff, and peers who do not understand these inconsistencies, and may even suspect or accuse students of deliberately underperforming or malingering during their most difficult periods (Toller & Farrimond, 2021).

On a related note, the invisibility of these conditions itself can create problems for students, many of which have been noted in their narratives. Most commonly, students describe encountering added barriers to obtaining the accommodations and other support they need for their conditions, because those conditions are either overlooked or outright challenged and disbelieved.[16] Depending on the institutional climate, battle fatigue from having to repeatedly defend the validity of an invisible condition may become a further drain on students' already limited time and energy (Giroux et al., 2016), or students' needs may simply go unmet if they do not have the will or capacity to keep fighting

16 Childers & Hux, 2016; Giroux et al., 2016; Anderson et al., 2018; Spencer et al., 2018; Zeedyk, 2019.

(Anderson et al., 2018). Some students also find that their peers are judgmental and unsympathetic about their conditions, due to not understanding the hardships invisible disabilities and neurodivergence can create (Erten, 2011). As much as students may feel the need to mask their symptoms and behavior, that mask can prevent them from obtaining much-needed support at the same time that it protects them from vulnerability.

Another related challenge is a spiral effect that is sometimes experienced by autistic and psychiatrically disabled students at times when they are struggling. It is a common pattern with these students that academic stress and falling behind with studies can worsen problematic symptoms and impairments, and vice versa; this vicious cycle can eventually lead students into complete crisis academically and personally if not interrupted.[17] Interruption is made far more difficult, however, by how autistic students frequently report a tendency to withdraw from others during periods of greater stress and difficulty, rather than reaching out for help.[18] As Ward and Webster (2018) incisively put it regarding autistic student study participants, when they 'were most in need of help, they were the least likely to request it' (p. 387), most often due to fear of stigma and guilt over 'bothering' university staff with difficulties they felt they should be able to self-manage. When autistic students are struggling, they may face even greater difficulty in resolving the issues without proactive external support, and this may be true of students in other categories as well.

Individual Strategies and Motivations

While students' self-described strengths tend to vary by category just as their weaknesses do, there are some notable recurring patterns across each. For one, when students understand their own individual needs, academic or otherwise, and develop personally tailored strategies to manage them, they report significant positive impacts. This seems to be

17 Hubbard, 2011; Markoulakis & Kirsh, 2013; Ennals et al., 2015; Anderson & Butt, 2017; LeGary, 2017; Bolourian et al., 2018; Ward & Webster, 2018; Anderson et al., 2020; Turosak & Siwierka, 2021.

18 Bolourian et al., 2018; Ward & Webster, 2018; Winberg et al., 2019; Clouder et al., 2020; Cox et al., 2021.

most reported in studies of students with ADHD[19] and autistic students,[20] but also in those of students with TBI (Ness et al., 2014; Davis, 2019; Owens, 2020), with dyslexia (Doikou-Avlidou, 2015; Stampoltzis, 2015; Thompson, 2021), and with psychiatric disabilities (Ennals et al., 2015; Kain et al., 2019; Turosak & Siwierka, 2021), as well as chronically ill students (Barber & Williams, 2021; Toller & Farrimond, 2021). An early sense of disability identity and strong self-awareness appears to support the development of these types of strategies (Erten, 2011). Students also need to have the time and space to develop strategies, along with other types of academic skills (Flowers, 2012). It is worth noting, as well, that sometimes no self-management strategy is sufficient to overcome a particularly severe challenge, impairment, or disabling environment (Heiney, 2011).

Similarly, while lack of academic motivation is reported as a challenge for students in some categories, particularly autistic and psychiatrically disabled students (Markoulakis & Kirsh, 2013; Schindler & Kietz, 2013; Cage & Howes, 2020), many students report developing successful self-motivation strategies to overcome this. For autistic students, lack of motivation has been found to be mitigated by their interest in particular career aspirations (Tarallo, 2012), or by setting specific goals for themselves (Accardo et al., 2019b). Veteran students with psychiatric disabilities also seem to be at an advantage over others in terms of managing low motivation, as military training is also cited as a mitigating factor (Ness et al., 2014). These students and others, however, may also benefit from seeking out additional sources of motivation to support them through their academic work. This is particularly true because motivation is frequently cited across studies as a significant factor in student success, especially for these students in particular (Zafran et al., 2011; Anderson et al., 2020).

Other students across various categories and studies describe a variety of motivating factors that aid in their success. One frequently cited motivator is the very practical one of the student's career and financial aspirations. Students recognize that college is a societal expectation for many career paths, and thus their determination to

19 Heiney, 2011; Kirwan & Leather, 2011; Melara, 2012; Schaffer, 2013; Lux et al., 2016; Lightfoot et al., 2018; James et al., 2020.

20 Toor et al., 2016; Ward & Webster, 2018; Accardo et al., 2019b; Anderson et al., 2020.

complete a degree stems from a clear view of its utility for the future.[21] Another common motivator is a positive attitude toward, and personal pride or pleasure in, educational achievement (Drake, 2014; Lambert & Dryer, 2018; Lightfoot et al., 2018); even when students do not cite this as a motivating factor specifically; there is also a general sense across the majority of studies that students generally regard higher education as a worthy, positive pursuit in itself, and one in which they would like to be successful. In particular, some students want to be successful in higher education in order to make family proud (Schaffer, 2013), or to honor the support they have received from friends and family (Bunch, 2016). Education can also be a positive and enjoyable part of life for students with psychiatric disabilities, by being a source of structure and meaning-making (Ennals et al., 2015), or a way of forming social connections (Ness et al., 2014). Many autistic students also find that they are particularly excited and interested by the academic challenge and intellectual stimulation of higher education, which helps to make the experience more enjoyable for them and increase their motivation.[22] For this to be the case, however, some students report it was especially important for them to align their chosen academic programs closely to their interests (Anderson et al., 2020).

By contrast, another motivating factor described by a number of students is, at least to some degree, spite. Many of the students interviewed across studies have had hurtful experiences in the past, either in university or in primary or secondary schooling, in which educators, peers, or others have expressed low expectations of them, or skepticism about their ability to succeed academically. The desire to prove those people wrong, or at least to prove themselves in general, was specifically mentioned as a powerful motivator by a number of students.[23] As one student in MacLeod et al. (2018) put it:

> Because I've got a lot of bad memories of people in education who basically said to my mum 'Josh will not achieve anything in his life'. And that's what drives you forward. It's like 'I will show you' and that's what it's all about really. (p. 690)

21 Melara, 2012; Tarallo, 2012; Ness et al., 2014; Bunch, 2016; Accardo et al., 2019b.

22 Ashby & Causton-Theoharis, 2012, Cullen, 2013; Drake, 2014; Anderson et al., 2017; Vincent et al., 2017; Ward & Webster, 2018.

23 Schaffer, 2013; Cipolla, 2018; Lambert & Dryer, 2018; MacLeod et al., 2018; Harn et al., 2019.

While of course the fact that so many students are able to transform these terrible experiences into a source of positive motivation is a demonstration of the courage and perseverance of these learners, it would be far preferable instead for them never to be subjected to such experiences at all. It is also worth noting that those who are not as able to overcome past emotional harm are no less worthy of the right to succeed in higher education.

Foundations of Identity and Confidence

Another valuable strength students report developing is the ability to thoroughly know, understand, and feel confident in themselves. Student self-awareness and metacognition have been linked with academic persistence across the literature on students with disabilities in higher education (Kutscher & Tuckwiller, 2019). Across an overwhelming number of narratives considered here, students are in agreement about the value of knowing their own strengths and weaknesses, how they best think and work, and how they most need to be supported.[24] In some cases, this was demonstrated to them negatively, by experiences of major struggle deriving from not being aware of their condition or their needs (Hubbard, 2011; Doikou-Avlidou, 2015; Lefler et al., 2016), and in others, students were able to gain significant insight into themselves through comparison to siblings and peers (Lux et al., 2016). In particular, a number of students particularly cite the importance of being aware of their individual strengths as well as weaknesses.[25] Developing positive self-acceptance of themselves, their characteristics, and their impairments is also mentioned by many students as critical to their success.[26]

Another factor that seems to support positive self-acceptance, as well as supporting student success in general, is a sense of positive disability identity: accepting and embracing that they are disabled, and that they would benefit from help and support in their areas of impairment, has

24 Heiney, 2011; Kirwan & Leather, 2011; Melara, 2012; Schaffer, 2013; Lux et al., 2016; Lightfoot et al., 2018; James et al., 2020.

25 Wilson, 2012; Doikou-Avlidou, 2015; Stampoltzis, 2015; Cipolla, 2018; Richardson, 2021.

26 Heiney, 2011; Kirwan & Leather, 2011; Carter & Sellman, 2013; Rutherford, 2013; Ennals et al., 2015; Brandt & McIntyre, 2016; Pfeifer et al., 2021.

repeatedly emerged from student interviews as a factor contributing to their success.[27] Along with self-acceptance in general, acceptance of a disabled identity can mitigate feelings of low academic self-confidence and not belonging in higher education, which can be frequent issues for students across many of these categories (Brandt & McIntyre, 2016). This is complicated, however, by the fact that students in these categories also tend to be less likely than other disabled students to accept their diagnoses and conditions, or to consider themselves to be disabled at all. Autistic and psychiatrically disabled students, in particular, appear to more often report ambivalence around whether they accept their respective diagnoses, and to be less likely to identify as disabled.[28] Acceptance of disability identity also tends to be complicated and uneven among chronically ill students, but especially crucial for success, as trying to push to imitate a nondisabled student's habits and patterns without support can in itself exacerbate illness symptoms and trigger health crises (Toller & Farrimond, 2021). These tendencies seem to contribute to the 'boom and bust' work pattern experienced by students who are mentally and physically chronically ill, as noted earlier: students assume that they do not need or do not deserve additional support, push themselves harder to succeed without it during periods of less severe symptoms, and by doing so trigger periods of more severe symptoms, which force them to reduce or stop their work again. A strong disability identity, meanwhile, seems to help facilitate more continuous support and balance, making these cycles less dramatic and disruptive.

While self-knowledge and self-confidence are consistently described as beneficial to students, however, it is also plain from students' narratives that these are skills that take time and effort to develop. Many students describe experiences of their capacity for self-understanding, acceptance, confidence, and advocacy gradually increasing over their time in college, as they matured and became more familiar with the college environment.[29] Older and more mature learners, such as

27 Erten, 2011; Heiney, 2011; Hubbard, 2011; Melara, 2012; Kreider et al., 2015; Sayman, 2015; Goodman, 2017; Clouder et al., 2020; James et al., 2020; Cox et al., 2021.

28 Simmeborn Fleischer, 2012; Downing, 2014; Kent, 2015; Sayman, 2015; Goodman, 2017; MacLeod et al., 2018; Cox et al., 2021.

29 Hubbard, 2011; Zafran et al., 2011; Ennals et al., 2015; Lux et al., 2016; Bolourian et al., 2018; Anderson et al., 2020; Cage & Howes, 2020; Grabsch et al., 2021.

returning students of nontraditional age, also appear to be more successful in college, likely because of similar factors (Bunch, 2016). It is heartening that students appear to be able to develop and strengthen these skills eventually, even if they are not present or strong at the start of higher education. As mentioned in the previous chapter, however, this means that students are likely to struggle much more early in college, and may fail, drop out, experience health crises, or some combination of these before they have time to learn the skills that would ultimately allow them to succeed. It could be beneficial to embed intentional coaching to support the development of these skills and attributes during the transition to university and in first-year support programs, or to strengthen it where it is already present.

Course Design and Student Needs

Overall Course Structure

Across a wide variety of student experiences, clear and coherent course organization overwhelmingly emerges as a valuable support—and the lack thereof as a significant barrier. Students with many different types of needs report that they particularly rely on strong course organization and structure to help them manage their academic work.[30] Careful structure, organization, and clarity are particularly important in online course environments, and when they are lacking, unfamiliar user interfaces and lack of context can make navigating the course at all an onerous, confusing challenge.[31] Course organization elements that have significant impacts include clear expectations for students, such as clearly communicated assignment instructions,[32] and clarity of course schedules and timelines (Redpath et al., 2013; Toor et al., 2016; Jansen et al., 2018). In poorly organized courses, students may find themselves unable to benefit from their own academic self-management and coping

30 Bush et al., 2011; Gelbar et al., 2015; Van Hees et al., 2015; Cai & Richdale, 2016; Toor et al., 2016; Anderson et al., 2018; Jansen et al., 2018; Cage & Howes, 2020; James et al., 2020; Maurer-Smolder et al., 2021.

31 Graves et al., 2011; Madaus et al., 2011; J.B. Roberts et al., 2011; Madaus et al., 2012; Catalano, 2014; Meyers & Bagnall, 2015.

32 Melara, 2012; Brazier, 2013; Rutherford, 2013; Cai & Richdale, 2016; White et al., 2016; Jansen et al., 2018; Gurbuz et al., 2019.

strategies, and may more easily become overwhelmed by their workload (James et al., 2020; Maurer-Smolder et al., 2021). Autistic students in one study explicitly wished for accommodations that would help them know what to expect from courses, such as priority access to course registration and advance knowledge of faculty office hours, to aid in managing their schedules (Accardo et al., 2019a).

To be clear, invisibly disabled and neurodivergent students do not need faculty to change the structure of each course to meet each student's individual preferences; this expectation would be not only unrealistic but unnecessary. What students need is for every course to have a thoughtful structure that is made explicitly clear, so that every student has as much advance knowledge as possible of what will be expected of them when and how, in order to plan for any potential problem areas. Even better, as indicated across a number of studies, is if the course and curriculum can be flexible, or modified when necessary, or both.[33] For example, across many student narratives, exams and other time-limited assessments emerge as a very common source of stress and accommodation need, especially when they are high-stakes, infrequent, inflexibly delivered, or any combination of these.[34] Rather than requiring students to invest significant additional time and effort into requesting and using special accommodations, faculty could instead consider permitting more flexibility in the time allotted for all students to complete tests. If specific time constraints are important for the skill to be tested, lower-stakes tests could at least be delivered more frequently throughout the term. In many cases, however, learning could very likely be evaluated with alternative types of assessment, which students who struggle in this area have indicated would be even more valuable (Erten, 2011; Kent, 2015; Gurbuz et al., 2019).

What appears to be most important is not the specifics of what faculty do to structure their courses, but that they clearly communicate their choices to students, and allow students as much control as possible over how they meet the requirements. In addition to aiding academic performance, supports that increase students' sense of

33 Gelbar et al., 2014; Van Hees et al., 2015; Cai & Richdale, 2016; Sarrett, 2017; Anderson et al., 2018; Ward & Webster, 2018; Lipka et al., 2019; Anderson et al., 2020.

34 Gelbar et al., 2014; Toor et al., 2016; Anderson et al., 2017; Smith, 2017; Anderson et al., 2018; Anderson et al., 2020; Clouder et al., 2020; Maurer-Smolder et al., 2021.

control over their coursework can significantly reduce the impact of anxiety disorders—sometimes to the point where, ironically, students no longer feel support is needed (Sokal & Desjardins, 2016). Another example of a beneficial strategy that increases students' sense of control is trigger warnings for sensitive course content (Orem & Simpkins, 2015). Sharing control of higher education experiences and helping to bolster students' confidence may seem like small gestures, but they can be uniquely powerful in their impacts.

Instructional Settings and Delivery

Another commonly recurring theme in students' narratives is that the physical environment of traditional lecture hall classrooms presents particular challenges. For example, traditional classrooms tend to foster many distractions, which is an issue given how common focus and attention challenges are as symptoms.[35] Noise and crowded spaces are also reported present slightly different challenges for autistic students, however, in the form of sensory overstimulation and heightened anxiety (Casement et al., 2017; Bolourian et al., 2018). Additionally, the size and configuration of lecture hall environments can increase students' difficulties with hearing and understanding professors, which is of significant concern for students who may already have language processing impairments (Mullins and Preyde, 2013). Smaller class sizes may help to mitigate these issues, regardless of course type (Hux et al., 2010; Melara, 2012; Lipka et al., 2019).

A traditional lecture style of teaching, similarly, can also be especially challenging for some students. Dyslexic students in several studies report difficulties with following class lectures (Clouder et al., 2020; Maurer-Smolder et al., 2021), as well as taking notes on them.[36] This is also true in many cases, however, of autistic students (Anderson et al., 2017; Accardo et al., 2019; Accardo et al., 2019b). On the whole, many students—especially those with ADHD and dyslexia—report benefiting most when instructors vary their instruction styles to be

35 Mullins & Preyde, 2013; Pirttimaa, 2015; Casement et al., 2017; Bolourian et al., 2018; Jones, 2020.

36 Olofsson et al., 2012; Pino & Mortari, 2014; Stampoltzis, 2015; MacCullagh et al., 2016; Smith, 2017; Clouder et al., 2020; Maurer-Smolder et al., 2021.

inclusive of different learning types and needs.[37] This includes in online instruction, where a number of students prefer interactive and hands-on learning exercises even in asynchronous online learning environments, over more passive formats like video (Catalano, 2014; Maurer-Smolder et al., 2021).

Methods of varying instructional delivery can take a number of beneficial forms. Across several studies, students with ADHD in particular felt they would benefit from interactivity and active engagement in the delivery of instruction, and also from information presented in multiple sensory formats, particularly visually (Heiney, 2011; Hubbard, 2011; Melara, 2012) Some students with ADHD also felt they would benefit most from instruction that includes repetition and reinforcement of information, opportunities for hands-on practice, and practical demonstrations of concepts (Lipka et al., 2019). Dyslexic students in Cipolla (2018) reported the most benefit from instructional activities that involved physical action and interaction, those that had a creative element, or both. In the same vein, in Clouder et al. (2020), students with both dyslexia and ADHD felt that interactive and otherwise nontraditional approaches to instruction were most helpful to them, while autistic students found that they received the most benefit from instruction that included a mentoring component and connections to practical application. Representing information in multiple sensory formats (visual, audio, etc.) has also been identified as valuable by autistic students, in cases where students have sensory processing issues with one or more formats (Ashby & Causton-Theoharis, 2012). As with course structure, it is not that there is one type of instruction that will most benefit neurodivergent and invisibly disabled learners, nor that every possible type of instruction needs to be included to cater to every possible preference. Instead, the more varied types of instruction are present, the better the chances of accommodating a greater variety of needs.

Much the same is true when it comes to the mode of instruction. Neither face-to-face instruction nor online is necessarily preferable for all categories, or even for all students within an individual category; autistic students, for example, report very mixed preferences across studies

37 Erten, 2011; Heiney, 2011; Hubbard, 2011; Flowers, 2012; Melara, 2012; Catalano, 2014; Smith, 2017; Sarrett, 2017; Cipolla, 2018; Lipka et al., 2019; Clouder et al., 2020; Maurer-Smolder et al., 2021; Richardson, 2021.

(Anderson et al., 2018; Lizotte, 2018; Adams et al., 2019). Some elements, however, can make each mode more or less helpful. Students in online courses can feel isolated from peers,[38] as well as from faculty (Madaus et al., 2011; Madaus et al., 2012; Adams et al., 2019), to the detriment of their learning experiences. Careful implementation, however, can make online course management systems a useful communication channel for students who would otherwise struggle to speak in class or to contact their instructors (Madaus et al., 2011; Madaus et al., 2012; Stampoltzis et al., 2015). Poor interface design in online learning systems can present major challenges for neurodivergent and invisibly disabled students,[39] such as a 'tunnel vision' effect some neurodivergent learners experience that causes them to hyperfocus on some interface elements and miss others (Meyers & Bagnall, 2015; Adams et al., 2019), or issues with cognitive load and information overload (Kent, 2015; Kent et al., 2018; Adams et al., 2019). Even so, the benefits of having course materials available online are significant,[40] as will be discussed in more detail next.

Course Materials

It is common for students in these categories to need access to course materials outside of class as an accommodation in general, whether these are notes, slides, or recordings, online or off. Being able to access instructional materials outside of class meetings provides a wide variety of affordances all at once, via the same relatively simple action: it enables review and re-study of material for students with attention and memory issues or who may need to be absent frequently; it provides control over playback and speed of recorded materials for those with sensory processing issues or impairments; it allows additional contact time with material for students with slower cognitive speeds; and more. What should be an easy accessibility win, however, in some cases proves complicated and frustrating for students instead.

While many students across studies express the need for course materials outside class, they also report varying rates of success in

38 Habib et al., 2012; Madaus et al., 2012; Heindel, 2014; Meyers & Bagnall, 2015; Adams et al., 2019.

39 Graves et al., 2011; Habib et al., 2012; Hollins & Foley, 2013; Downing, 2014; Kent et al., 2018; Adams et al., 2019.

40 Graves et al., 2011; Madaus et al., 2011; Madaus et al., 2012; Melara, 2012; Stampoltzis et al., 2015; Adams et al., 2019.

receiving them.[41] Some students indicate that the timing of when they receive course materials is also important: in most cases they require course materials before the actual class instruction period for these to be most helpful, and this need is not always met (Olofsson et al., 2012; Brazier, 2013; Toor et al., 2016). This is an area where online courses often provide superior affordances, as course materials are available at all times by default in this learning environment (Graves et al., 2011; Madaus et al., 2011, 2012). This effect can also be achieved, however, by consistent use of a course shell for face-to-face courses—provided, of course, that faculty are willing. A number of students also report that whether faculty actually provided course materials to them was often largely dependent on personality, with some responding to students' requests with reluctance or outright refusal (Stein, 2013; Strnadova et al., 2015). This is concerning, especially given that what faculty in these cases refuse to do—sharing material that would need to be prepared for class anyway—is arguably the simplest possible task to accommodate students' needs. This is not encouraging about faculty willingness to use more complicated and time-consuming methods of capturing class information, like recording class sessions.

Course Policies and Technology

Specific types of face-to-face course policies are frequently cited by students as another barrier to academic success. Required attendance policies, in particular, can present significant challenges for students across multiple categories of difference. Chronic illnesses can cause frequent absences for students, which already create issues for students academically, socially, and financially (where it affects them in the workplace), and these problems are only exacerbated by courses with strict attendance policies (Giroux et al., 2016; Barber & Williams, 2021). This is especially true in cases where faculty require medical documentation for absences, as in many cases not only does this documentation intrude on the privacy of students with chronic conditions, but it can also be difficult to procure, especially for students

41 Bush et al., 2011; Olofsson et al., 2012; Brazier, 2013; Gelbar et al., 2014; Pino & Mortari, 2014; Stampoltzis, 2015; Toor et al., 2016; MacCullagh et al., 2016; Anderson et al., 2018; Serry et al., 2018; Accardo et al., 2019a & 2019b; Anderson et al., 2020.

who have frequent and routine needs for medical care that disrupt their schedules (Barber & Williams, 2021). As indicated by Turosak and Siwierka (2021), however, students may also run afoul of attendance policies with any type of condition that impairs concentration or negatively affects rest and sleep—which are frequent symptoms of nearly all of the conditions under discussion here. While requiring class attendance may be intended to help students, by ensuring that they will be present to engage with course content alongside their peers, policies implemented without care and flexibility can be more harmful to students than they are helpful.

Another type of course policy that presents barriers to students is any policy restricting the use of technology in the classroom, particularly mobile phones and laptop computers (Pfeifer et al., 2021). These types of devices can be used to support assistive technologies for students with some types of conditions: for example, mobile devices or applications for reminders and scheduling can be particularly valuable to students with traumatic brain injuries and with chronic illnesses in general (Brown et al., 2017; Ravert et al., 2017; Leopold et al., 2019). Furthermore, students across multiple studies have indicated that general access to computing technology can act as a support for multiple conditions and ease relevant learning barriers.[42] Restricting students' access to technology in the classroom, therefore, although it is intended by faculty to reduce distractions, may instead deprive some students of tools that they rely on to help them maintain focus and manage their learning. As with attendance policies, while certain courses and situations may demand some limitation of the technological devices that are present, any policy along these lines should be implemented only with care, flexibility, and consideration for accessibility needs.

When available and used effectively, however, technology can be extremely helpful, and this is even true when the student in question cannot physically be present in the classroom at all. Students with chronic illnesses in particular are frequently forced to miss class sessions due to changes in their symptoms, but the option of providing hybrid or flexible class attendance using video conferencing and other technologies can help students to remain included and engaged even when they cannot be physically present (Giroux et al., 2016). Furthermore, due to the need

42 Hubbard, 2011; Bunch, 2016; Giroux et al., 2016; Grabsch et al., 2016.

for this type of flexibility during the isolation periods of the COVID-19 pandemic, far more faculty are now familiar with teaching this way than were at the study's time of writing, making this suggestion more feasible than ever to implement. Neither are chronically ill students the only ones in these categories for whom frequent absences are an issue. Students with psychiatric disabilities may also struggle to make class meeting times during periods of particular mental health struggle, and it could place less sensory stress on autistic students to attend classes remotely as needed. By effective use of technology, not only could the classroom environment be improved for students, it could be extended to include remote environments where students can have more of the affordances they need to be successful. This is only possible, however, if the student has the appropriate resources. A student without financial access to technology may not be able to access necessary tools unless provided with a computer, either in the classroom or—better still—by the institution as part of a one-to-one laptop program.

Summary and Conclusions

Negative experiences with higher education faculty and staff, especially teaching faculty, make up a concerningly common thread across student narratives. Some of the incidents described have significantly damaging impacts, both academically and psychologically. A large number of students report experiences of being misunderstood, dismissed, or belittled by faculty on divulging their support needs. These experiences are particularly frustrating because, when faculty are simply empathetic and supportive, the positive impacts of those experiences are similarly transformative. This raises questions of faculty accountability for their behavior toward this marginalized community, and how it affects students' learning environment. While fortunately the most severe mistreatment seems to be relatively rare, it is important for departments across the institution to be aware that it is still possible, and to take proactive steps to ensure that students are as protected as possible, and have transparent channels for addressing discrimination. In less serious cases, increased professional development and support for faculty would likely address many of students' concerns.

At the same time, students' academic lives are also impacted by internal factors. Across multiple categories, they are especially likely to

struggle with aspects of information processing and communication, which disadvantages them in meeting common requirements of academic work. The invisibility of their conditions also presents challenges for students across all categories, making it more difficult for them to obtain necessary supports. In some cases, symptoms also fluctuate and cycle in unpredictable ways, creating further difficulties. On the other hand, many students find that they are able to develop self-knowledge, corresponding study strategies, and ways of motivating themselves, all of which benefit them significantly in their academic work. A sense of positive disability identity helps to foster all of these skills. Like all of these strategies, however, this tends to take time and maturation to develop, leaving students more at risk earlier in their college careers, and more so the less mentorship and support they have in developing in these directions.

This makes it all the more important to work toward designing and delivering more inclusive courses, which can begin from a few relatively simple actions. Clear, consistent, and organized course structure, with transparent instructions for assignments and assessments, provides a critical foundation for accommodating a wide variety of needs. Lecture-style teaching and classroom setups may be barriers for some students, but varying instruction styles and providing opportunities for interactivity can help mitigate these issues without necessarily changing an instructor's entire pedagogical approach. Online courses need to take particular care to avoid making students feel isolated, or overwhelming them with confusing and distracting elements. Simply providing lecture slides and notes for reference outside of class already improves the accessibility of a course significantly, leaving aside whether instructors can or will take the extra step of audio- or video-recording class instruction. Providing ample feedback, monitoring and guiding group work, and implementing course policies around attendance and technology with care, and only when necessary, will also eliminate many of the most significant barriers that vulnerable students face in the classroom.

If these recommendations sound like a simple matter of being a conscientious, attentive, and compassionate educator, it is because that is precisely what they are. The factors that make learning more manageable for neurodivergent and invisibly disabled students sometimes center

around particular and even unexpected themes, but on the whole, they are not mysterious secrets. They are much the same factors that make a course more manageable for any student. As previously discussed, for that matter, neither is being neurodivergent or disabled a binary off-on switch. Each is a continuum, along which some students with more 'severe' challenges than others may nonetheless have strengths in the areas that allow them to be academically successful, and some students with 'milder' challenges may nonetheless have particular weaknesses that cause them to need significant help to succeed. Still other students may never have been diagnosed with any condition at all, for any number of reasons, and yet may have greater needs in certain areas than do students who have applied and qualified for formal accommodations. A rising tide of course accessibility will truly lift all boats, and meet more genuine needs than only those that have been presented with an accommodation letter. This, too, is one of the core principles behind Universal Design for Learning (UDL) as an approach.

Faculty, however, face their own barriers in making these changes. Instructors are frequently overextended and asked to do too much with too little, dividing their attention between teaching, research, and service requirements, and this tension tends to be especially acute for faculty with marginalized identities, including faculty who are disabled themselves. It may come as a major burden to ask them to exert additional efforts, without significant institutional support, to implement structural improvements to their courses, even if it is in order to make them more supportive for students. Unlike primary and secondary educators, also, higher education faculty are not universally taught pedagogical skills prior to undertaking teaching responsibilities. Training in this area is by no means a component of all doctoral programs to this day, and this is to say nothing of the many courses that are taught, especially in universities, by contingent faculty who may not have completed doctoral programs, and who are neither afforded enough control over the courses they teach nor compensated appropriately for the required time to be able to make substantive changes. Many institutions are also reluctant to impose any teaching standards or requirements on faculty with more time and security, in the name of academic freedom—including requirements affecting accessibility and student learning. Where this is the case, however, it is an erroneous application of the

principle. Academic freedom is extremely valuable and of critical importance, but it concerns the protection of potentially controversial instructional content and methods, not the protection of faculty from accountability to their students for ethics and equity concerns. Clearer and more consistently applied expectations might well be of significant benefit not only for students, but for instructors also.

Similarly, in some cases faculty are hesitant to implement changes that might make courses easier for students, even if they might make the course easier for *all* students, for fear that this will compromise the course's rigor (Tobin & Behling, 2018, p. 35). This, too, is based on an erroneous assumption: the false equivalence of 'rigor' with 'difficulty,' or even with inflexibility specifically. This is a perception that Pfeifer et al. (2021) note is particularly prevalent in STEM fields. None of the course elements discussed in this chapter, however, would affect a course's rigor to modify, in that they would not compromise students' authentic learning of the course concepts. Students' success in a given course should not be measured on their ability to argue with faculty over whether they should receive accommodations, nor to navigate confusing course organization or guess at unclear structure and directions, nor to eschew technology, nor even to have perfect attendance. Flexibility in these matters decreases difficulty only in the *'how'* of learning, not in the *'what'*. Sometimes, certainly, it is necessary for a course to proceed in a certain way that requires specific logistical elements, or for students to learn course content under specific conditions. Even in those cases, however, there are likely to be ways that instructors can be transparent and deliberate about those needs, and even flexible within their parameters, without compromising the rigor of the course. It may simply require creativity, and the willingness to engage students as partners and collaborators.