Accommodations and Universal Design: Supporting Access to Assessments in Higher Education

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Abstract

Because of recent legislative mandates, students with disabilities have unprecedented opportunities to attend institutions of higher education. Access to instruction and assessment is provided through the use of reasonable accommodations. However, such accommodations are legally and procedurally complex. This article addresses the legal and procedural evidence required to receive testing accommodations. In addition, we discuss procedures for supporting student needs by applying the principles of universal design to assessments. By changing assessment practices to include support structures for all students, access to higher education can be promoted.

Postsecondary education in the United States has a long and varied history in terms of access for diverse populations. Beginning with the early colleges and universities, admission to institutions of higher education has been restricted to students with specific characteristics. Although early colleges and universities allowed students from varied social classes, only men were permitted to study (Brubacher & Rudy, 1997). However, raising costs of attending prestigious universities such as Harvard and Yale precluded students from low socio-economic status from attending, thereby restricting access to society's elite. As such, early institutions of higher education primarily served privileged students.

As political and social pressures mounted to diversify all postsecondary educational institutions, opportunities for women, ethnic minorities, and persons from middle and low economic backgrounds became available across the country. These opportunities did not come without a price, however. Many students from underrepresented groups faced discrimination and harassment during their tenure at postsecondary educational institutions (Schaefer, 1996). Today, many college campuses still reflect a white, male-dominated student body, especially in science and math as well as advanced degrees. Until recently, students with disabilities were similarly excluded from higher education. Because of current legislation, however, these students are entitled to equal access to postsecondary education and may receive reasonable accommodations to alleviate the barriers caused by their disability. Although questions still arise about rights and responsibilities of both the institution and the individual, students with disabilities have greater access to institutions of higher education.

In this article, we describe the legislative mandates requiring access to higher education for students with disabilities. Focusing on assessments, we interpret legal documents to define accommodations procedures and determine the availability of services for students with disabilities. We also describe the roles and responsibilities of students and university officials in assigning and administering accommodations. In addition, we describe principles of universal design for assessment as a mechanism to increase access to educational assessments for all students, including students with disabilities. By considering the range of student needs during the design and development of assessment tools, the need for accommodations may be minimized. As such, universal design for assessment provides a possible avenue for increasing access to postsecondary educational opportunities to all students.

Higher Education Accommodation Practices

Legal Background for Accommodations

The notion of access to higher education for a diverse population gained momentum for people with dis-

abilities in the 1970s. Legislation such as Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 have provided greater access to qualified persons with disabilities in higher education. Section 504 of the Rehabilitation Act of 1973 prohibits discrimination against individuals with disabilities by any institution receiving or benefiting from federal funds. In a continued effort to prevent discrimination, the Americans with Disabilities Act of 1990 extends the antidiscrimination laws to programs or services provided by both local and state governments as well as private employers and public services, accommodations, and transportation.

The Americans with Disabilities Act (ADA, 1990) seeks to reduce "unfair and unnecessary discrimination and prejudice" against people with disabilities. Under ADA, a disability is defined as "(a) a physical or mental impairment that substantially limits one or more of the major life activities of such individual, (b) a record of such an impairment, or (c) being regarded as having such an impairment" (ADA, 1990, 42 U.S.C. § 12101(2)). In higher education, ADA requires institutions to provide access to educational services and opportunities through reasonable accommodations for students with disabilities who are otherwise qualified to participate, thereby allowing individuals with the "opportunity to compete on an equal basis and to pursue those opportunities for which [United States'] free society is justifiably famous" (ADA, 1990, 42 U.S.C. § 12101(a)(9)). The most oft cited support service provided by colleges and universities to students with disabilities are testing accommodations, followed by note taking, counseling, and advocacy (Tagayana, Stodden, Chang, Zeleznik, & Whelley, 2005). Under federal regulations, services do not extend to diagnostic testing, specialized tutoring or counseling, or occupational, physical, or speech and language therapies (Simon, 2001).

Although the antidiscrimination laws that govern institutions of higher education apply to K-12 settings, additional regulations protect the rights of younger students. Notably, the Individuals with Disabilities Education Act (IDEA, 2004) mandates procedures for making instructional decisions for students in K-12 institutions who qualify for special education services through individualized educational programs (IEP). An IEP team consisting of members of the educational community who are familiar with the student and his or her needs meets to determine the most appropriate services for the individual. Among other guidelines, IDEA requires that IEPs include "a statement of any appropriate accommodations that are necessary to measure the academic achievement and functional performance of the child on State and district-wide assessments" (IDEA, 2004, 20 U.S.C. § 1414 (A)(1)(VI)(aa)). No such oversight committee exists for students with disabilities in higher education settings. Once students leave high school, they must become their own advocates for accommodation practices.

Accommodations in Higher Education

Institutions of higher education offer support to students with disabilities through Disability Services offices. Such offices act as on-campus advocates and facilitators of accommodations for students with disabilities. Students with disabilities, who have firsthand knowledge of the challenges of disability in higher education, often staff these offices and provide support to other students with disabilities. However, even with the support of Disability Services offices, accommodations procedures might vary from institution to institution.

Accommodations are defined as changes in instruction or assessment practices that reduce the impact of an individual's disability on his or her interaction with the material. Accommodations can include changes to the setting in which instruction is presented or assessment tasks are given, the amount of time allocated to a student to learn a concept or complete a task, the format of the information that is presented, the method through which the student responds to questions, or the materials or equipment that support the student in his or her ability to interact with the material. To be considered effective, accommodations should reduce construct-irrelevant variance caused by the individual's disability without changing the construct targeted by instruction or assessment. For example, in the court case *Rush v. National Board of Medical Examiners*, the District Court of Texas decided that without an accommodation of extra time on the U.S. Medical Licensing Exam, the test was measuring the plaintiff's disability, not his medical expertise. This decision illustrates the beneficial nature of accommodations in supporting students' access to educational opportunities that may otherwise be limited due to their disability.

Who Should Receive an Accommodation? Accommodation procedures in higher education institutions are typically university-specific but are guided by the ADA and Section 504 of the Rehabilitation Act of 1973. Under these regulations, students with disabilities are entitled to reasonable accommodations if they are otherwise qualified to participate in the educational program. If an individual does not possess the qualities that would allow him or her to be successful in the program or future activities without considering the disability, the institution is not required to provide accommodations. This aspect of the law was upheld in the U.S. Court of Appeals ruling in the *Powell v. National Board of Medical Examiners* case, in which the plaintiff failed part of the Medical Licensing

Exam three times and was subsequently dismissed from medical school. In the past, the plaintiff had educational difficulty and an average to low-average IQ. Because the plaintiff failed to demonstrate that she was otherwise qualified to attend medical school, the court upheld the National Board of Medical Examiners' decision to disallow accommodations.

Accommodations should be designed to reduce the impact of the individual's disability on his or her learning or measurement of achievement. Reasonable accommodations are those changes to classroom and assessment practices that do not place an undue administrative burden or cost on the institution. Such changes include specially designed equipment, structural alterations, or modifying classroom procedures (Rehabilitation Act, 1973). Changes that alter the expectations of the program or standards for achievement are not advocated for under federal regulations (Wilhelm, 2003).

In order to receive an accommodation, the student must be identified as having a disability that interferes with at least one major life activity. Life activities include a variety of behaviors from daily tasks such as eating, sleeping, and interacting with others to functional tasks such as reading and writing. Documentation of a disability is necessary but not sufficient to warrant providing accommodations, however. The individual must demonstrate that the disability affects normal functioning of daily activities to the point that he or she performs significantly below the average person. As such, even if a person has a documented disability that impairs daily activities, if the impairment does not impose limitations beyond the functioning of the average person, accommodations are not required. In addition, if medications, assistive devices, or self-accommodations mediate the influence of the disability on performance, accommodations are not warranted under ADA (Ranseen & Parks, 2005; Wilhelm, 2003).

Given these legal intricacies of implementing federal legislation, it is not surprising that multiple court cases have been filed regarding accommodations in higher education settings. For example, in *Marlon v. Western New England College*, the District Court of Massachusetts decided that the plaintiff's disabling condition of pain, anxiety, and depression did not substantially limit the major life activity of learning. Since her symptoms primarily affected her ability to take long exams, this was not deemed significant enough to warrant special provisions. In addition, the plaintiff was able to attend another university and continue working, thus providing confirming evidence that the disabling condition did not substantially affect a major life activity.

Cognitive disabilities are often difficult to evaluate. Learning disabilities or other cognitive impairments such as attention deficit disorder (ADD) and attention deficit disorder with hyperactivity (ADHD) are often the most challenging disabilities to document. For instance, learning disabilities have historically been diagnosed by examining the discrepancy between a student's aptitude as measured by IQ tests and achievement as determined by various standardized measures. However, this classification method may not be sensitive to individual differences and may lead to misdiagnosis (Wilhelm, 2003). In addition, students with ADHD may be difficult to distinguish from other students who display disinterest or an inability to focus on academic tasks (Hampton & Gosden, 2004). If students are incorrectly identified as having cognitive disabilities and are subsequently provided with accommodations, the fairness of the system is jeopardized because of the inappropriate advantage that accommodations might provide.

What Accommodations Are Effective? To be considered effective, accommodations should reduce construct-irrelevant variance caused by the student's disability. Accommodations research examines the interaction hypothesis to determine if accommodations provide students with disabilities with a differential boost in performance when compared to students without disabilities (Sireci, Scarpati, & Li, 2005). If all students benefit from the accommodation, the accommodation is not targeting the skill deficits caused by the disability but instead is providing an unfair advantage to students who receive it. If students with disabilities receive a greater benefit than students without disabilities, the accommodation may still be appropriate but additional investigations into the test development and administration may we warranted to determine if the test is too restrictive for all students.

When examining the use of accommodations, the predictive evidence for validity of the resulting test scores should be evaluated. In other words, care should be taken to determine if a score on an accommodated test predicts a future outcome (e.g., success in college, performance in a profession) with the same level of certainty as a non-accommodated test. Of particular importance is licensing exams (Ranseen & Parks, 2005). If accommodations change the underlying construct of the test, the interpretations of student proficiency in the targeted content will be different for students who use accommodations and students who do not (Sharp & Earle, 2000). In high-stakes environments, a student may receive a license based on performance on an accommodated test who does not have the same skills or knowledge as a student who takes the test without accommodations. These same principles ap-

ply to classroom-based assessments or department or school exams that are used to determine readiness to advance in academic standing. However, little research in these areas is available to support accommodation decisions.

How Are Accommodations Assigned and Administered? Under ADA regulations, students in higher education are required to disclose their disability to appropriate officials, provide documentation of the extent of the disability, and facilitate the provision of reasonable accommodations. In addition, it is up to the student to contact the appropriate authorities if a conflict or discrimination issue arises. These responsibilities differ significantly from those of students in K-12 settings where the onus is on the school systems to provide diagnostic testing and documentation services, and ultimately appropriate accommodations. Although transition plans from high school to higher education are required components on IEPs as defined by IDEA, many students enter institutions of higher education unaware of their role in determining instructional and assessment supports.

Such provisions have obvious implications for students with disabilities in higher education settings. Some examples noted by Bierwert (n.d.) include students with disabilities feeling nervous or anxious to talk with their professors about needing accommodations for fear of being known for their disability or being treated differently. Other students delay asking for accommodations until they have established a relationship with a professor, which is often too late for mid-term assignments and exams. Still others avoid asking for accommodations because of the social stigma among peers or an internal struggle and desire to feel independent. These reasons aside, current legislation requires that students with disabilities be self-advocates in the classroom.

Universities and other institutions of higher education can support students with disabilities by providing trainings on issues around their rights and responsibilities, self-advocacy, and conflict resolution. In a study conducted by Palmer and Roessler (2000), students with disabilities who received training in communication and negotiation skills had a significantly higher score on outcome measures of knowledge of accommodation rights and responsibilities, self-efficacy in requesting accommodations, conflict resolution, and social competence than students who did not receive training. It follows that students who understand their legal rights and are better prepared to engage in a discussion around accommodations are more apt to seek the supports they need to be successful.

Other barriers to administering and assigning accommodations relate to faculty's lack of knowledge about federal regulations, uncertainty about ethical implications of accommodations, and ambivalent attitudes toward supporting students with disabilities (Bento, 1996; Ranseen & Parks, 2005). Faculty members may have limited understanding of federal regulations mandating access to reasonable accommodations for students with disabilities (Vogel, Leyser, Wyland, & Brulle, 1999). In addition, faculty may be unaware of the limitations caused by a disability and how accommodations can help students overcome these barriers (Bierwert, n.d.). Ethical implications of providing accommodations may also surface. Faculty may be caught in a dilemma between ensuring sameness for all students and providing equal opportunities to others (Bento, 1996). Additionally, some faculty members might be ambivalent toward students with disabilities. In a survey of approximately 40% of faculty members at a doctoral-granting institution, Vogel and colleagues (1999) found that although faculty were willing to provide accommodations to students with disabilities, the most accepted accommodations were changes that required little effort on the part of the instructor to implement or monitor. As this evidence suggests, actual accommodation practices are influenced by many factors.

Universal Design

Evidence such as court cases, inconsistent decision making within and across universities, and social stigma for students who request accommodations suggests that accommodations are an unresolved issue in higher education. In terms of assessment, accommodations can level the playing field for students with disabilities, but only when students request and are provided such reasonable accommodations. Because provision of accommodations is at best uneven, Disability Services offices and faculty may wish to consider preventative measures to minimize the need for accommodations. One such approach is universal design of assessment.

Universal design of assessment, much like universal design of instructional practices and universal design for learning, is based on principles of access first developed in architecture. The Center for Universal Design at North Carolina State University defined universal design in architecture as "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design" (Center for Universal Design, 1997, ¶1).

For instructional purposes, the metaphor of access to instruction for all students is logical. Universal design of assessment, however, is more nuanced. The very nature of assessment is to distinguish between students who have

and have not acquired specific skills or knowledge within a construct. Therefore, assessments are at times necessarily difficult for students. For assessment purposes, the idea of universal design is not for all students to "pass," but for all students to be able to demonstrate their skills and knowledge without barriers.

A recent summit of researchers studying universal design of assessment brought together representatives interested in making assessments more accessible to a variety of students, including students with disabilities. The summit participants, including researchers from five states, defined universal design of assessment as a process for ensuring that tests are developed and administered to provide the widest range of students with the opportunity to demonstrate their construct-relevant skills, knowledge, and abilities, without compromising the validity of inferences drawn from test results (Allman et al., 2006). Participants at the summit (including the authors of this paper) agreed that universal design of assessment provides students maximal opportunity to demonstrate knowledge without changing the focus of the assessment.

Faculty and Disability Services offices can apply the principles and theories for universal design of assessments to postsecondary settings in order to make assessments as accessible as possible without diminishing curricular requirements. For example, Dolan, Hall, Banerjee, Chun, and Strangman (2005) have found that students are more successful when flexible options (such as read-aloud approaches) are available to all students in an on-demand fashion. To this end, advanced computer technology now allows users to retrieve information in multiple ways and provides multiple opportunities for expression (Hall, Strangman, & Meyer, n.d.). For example, technology enables text-to-speech capabilities, voice activated transcription of responses, and automated translations across languages including Braille. Additionally, digital formats allow students to easily enable assistive devices. Combined, these "built in" accommodations promote universal access and minimize the stigma of separate accommodations (Hasselbring, Lewis & Brausch, 2005).

A complementary approach to improving the accessibility of assessments is to examine the properties of the assessment itself – whether it is a paper-and-pencil or a technology-based test. Thompson, Johnstone, and Thurlow (2002) developed *Elements of Universally Designed Assessments* to guide the design of K-12 large-scale assessments, including: (a) inclusive assessment population, (b) precisely defined constructs, (c) accessible, non-biased items, (d) items that are amenable to accommodations, (e) simple, clear, and intuitive instructions, (f) comprehensible language, and (g) maximum legibility. These elements have been transferred to classroom assessments and assignments in K-12 education (Acrey, Johnstone, & Milligan, 2005) and can be easily adopted for assessments in higher education settings.

For example, one of the most important tasks in developing any assessment is to carefully define the construct to be tested. A construct may represent a large "domain" of skills or be testing a specific criterion. In either case, it is important to clearly articulate the construct to be tested in order to minimize construct-irrelevant behaviors (Haladyna & Downing, 2004). More succinctly, accessible assessment practice suggests that designers discriminate between the actual domains they want to test and any non-construct domains that may act as barriers to students (Ketterlin-Geller, Yovanoff, & Tindal, in press).

Another step toward creating tests following the principles of Universal Design is to reduce test bias. Test bias causes systematic errors in performance based on student characteristics. Alvermann and Phelps (2002) identified four types of bias that students may encounter: (a) conceptual bias (when the content is not reflective of students' prior or in-class learning), (b) linguistic bias (when the language unrelated to constructs is unfamiliar to students), (c) functional bias (when there appears to be no functional purpose to a task on an assessment or assignment), and (d) consequential bias (when the consequences of an assessment do not match the inferences that can be validly drawn from an assessment). Instructors designing in-class assessments can increase the validity and accessibility of the interpretations of their measures by considering and removing bias that might be present.

Thompson et al., (2002) also describe how assessments can be designed to allow accommodations in the event they become necessary. Because universal design will never completely remove the need for accommodations, part of the universal design process is to ensure that students who use accommodations are receiving comparable tests to those who take tests under standard conditions. As such, changes to the setting, timing, presentation, response mode, or equipment should not change the intended constructs. To ensure integrity of the test, instructors may wish to seek guidance on designing and delivering accommodations that make the test no more or less difficult that the original format. Accommodations are meant to level the playing field for students with disabilities, not by changing the difficulty of the test, but instead by changing the accessibility.

Another part of the universal design process is to include simple, clear, and intuitive instructions and administrative procedures. Thus, an accessible assessment main-

tains high standards in terms of content, but is easy to navigate. In this case, examples from the field of accessible architectural design are relevant to assessment. In architecture, a structure may be architecturally complex, but is made more accessible through arrows that point users to various areas of the structure, doors that can be opened by a variety of users, and elevators to help users reach all areas of the structure. Likewise, assessments that provide clear instructions to students and have intuitive procedures are most likely to help instructors know exactly what students do and do not know.

An assessment may also become more accessible if the language used in items and tasks is comprehensible. Rakow and Gee (1987) describe "comprehensible language" within the context of learning activities and assessments. Comprehensible language does not always mean simplified language, as sometimes the intended construct of an assessment is to dissect authentic (and possibly difficult) text. However, when constructs are unrelated to specific language demands, Rakow and Gee's suggestions (adapted for this article) may be useful, including:

- Knowing if students are likely to have experience and prior knowledge related to the item
- Determining if the vocabulary is appropriate for students' level of education
- Examining items to determine if sentences are unnecessarily complex
- Determining if definitions and examples are clear and understandable
- The demands for reasoning skills are appropriate for the course
- Relationships in text are made through precise, logical connectives
- Content within items is clearly organized
- Graphs, illustrations, and other graphic aids facilitate comprehension
- Questions are clearly framed

Building on these principles, Thompson et al. (2002) highlight the importance of designing maximally legible tests. Researchers in the field of vision and reading have determined that certain formatting specifications increase comprehension for most readers. Specifically, black type on white matte (glare-free) paper is easiest for most readers to see (Menlove & Hammond, 1998), although digitized assessments provide readers a choice of print colors. In terms of font size, people with excellent vision can read 10- to 12-point size print with little difficulty (Gaster & Clark, 1995), but 14-point font is helpful to people with print reading difficulties. Students with low vision will most likely need 18-point print.

In addition to the size of print, the amount of space between letters and lines also may increase accessibility. For example, lines and letters with more space between them are easier to read than jumbled letters and lines with little "leading" (space between lines) (Gaster & Clarke, 1995). Text that is justified to the left but has ragged right edges maintains standard space between letters and minimizes hyphenation, thus increasing legibility (Arditi, 1999). Finally, the American Printing House for the Blind (www.aph.org) recommends sans-serif fonts (fonts without tails) such as Arial or Verdana, and has a free downloadable font called APHont that is specifically designed for persons with low vision but can be used for all readers (see http://sun1.aph.org/products/aphont.html).

In sum, providing tests in digitized formats and using *elements* of universal designed assessments to guide test development may help postsecondary students and faculty overcome the legal and procedural difficulties in assigning and administering accommodations. Universal design, however, is not a one-time activity for which there is an endpoint. Rather, the process of making assessments more accessible is an iterative and ongoing process. Ensuring assessments are available in digitized formats and are designed for accessibility in terms of precisely defined constructs, accessibility, reduced bias, amenability to accommodations, clear instructions, comprehensible language, and legible print are important first steps that higher education personnel can take in order to design assessments for accessibility.

Ongoing refinements of assessment tasks can be integrated into teaching practices. For example, Disability Services offices can facilitate informal peer reviews of assessments for accessibility. In these reviews, peers use accessibility checklists to examine each other's assessments for accessibility (an example of a checklist is found in the Appendix). However, checklists are only a small piece of a larger accessibility puzzle. In addition to prescreening assessments for accessibility, faculty can examine data patterns in their course's assessment results. Item- and essay-level data may help instructors understand if certain populations are under performing on certain tasks. Such information is important for both instructional decision making and for understanding how the design of assessments may affect particular populations.

Related to understanding how design affects particular populations are research studies using cognitive laboratory approaches. Cognitive labs, or "think aloud" activities can be used with students with different disability status and from different cultural and linguistic backgrounds. In these activities, students "think-aloud" or verbalize while they are completing a task (Ericsson &

Simon, 1995). In the case of higher education, it may be useful for faculty or Disability Services offices to have students participate in think-aloud activities around different assessment types and items. The information derived from such activities may provide useful strategies for designing more accessible assessments.

In conclusion, myriad approaches at both the individual and the systemic level can aid personnel in colleges and universities in the process of making assessments more accessible. The term *universal design of assessments* refers to the intentional design of assessments to be as accessible as possible without reducing construct-relevant requirements. In theory, assessments created using universal design approaches are more accessible to students with disabilities and students without disabilities alike. As such, universal design appears to be a valuable way to reduce the need for controversial accommodations in postsecondary education.

Conclusion

It is an important final note to recognize the interconnection between universal design and accommodations. Universal design of assessments is an approach that seeks to improve the overall design of assessments for all students. Although much of the research conducted in universal design for assessment to date has been concerned with making assessments more accessible to students with disabilities, there is often a spillover effect for other students, that is, other at-risk students, such as English language learners, struggling readers, and students from diverse socioeconomic backgrounds also benefit (Johnstone, 2003). However, accommodations are highly individualized. Students who use accommodations require specific considerations that may require separate testing provisions from the other students in a class. While universal design approaches may help these students to access the content in a test, accommodations may still be necessary to minimize the effects of a specific learning or sensory disability.

Postsecondary institutions can support faculty understanding of administering and assigning accommodations by providing learning opportunities such as workshops on disability rights, maintaining websites or other information sharing networks for faculty discussion forums, and providing strategies and suggestions for universal design and accommodating students' needs. Combined, these approachs may improve assessment in postsecondary education in general by increasing faculty awareness of accommodation practices as well as offering solutions to support student success within and across the curriculum.

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Appendix

Considerations for Universally Designed Assessment Items
National Center on Educational Outcomes: University of Minnesota

Star (*) areas of strength and Check (?) areas of concern for each item	Passage	Item #1	Item #2	Item #3	Item #4	Item #5	Describe Concerns and Suggestions for items and reading passages (include item # with comment)	Recommend review by expert or student in Content Area, Specific Disability, Language, Culture	
Item tests its intended construct								Expert review?	Expert review?
Item respects the diversity of the assessment population • Sensitive to test taker characteristics and experiences (gender, age, ethnicity, socioeconomic status, region, disability, language) • Avoids content that might unfairly advantage or disadvantage any student subgroup • Other								Expert review?	Student review?
Item has concise and readable text • Commonly used words (except vocabulary tested) • Vocabulary appropriate for grade level • Minimum use of unnecessary, construct irrelevant words • Technical terms and abbreviations avoided unless tested • Sentence complexity appropriate for grade level • Question to be answered identifiable • Present tense and active voice								Expert review?	Student review?
Item has a clear format for text • Standard typeface • Twelve (12) point minimum size for all print, • High contrast between text and background • Sufficient blank space • Staggered right margins								Expert review?	Student review?