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Table of Contents

Journal of Postsecondary Education and Disability 30(2)

A Taxonomy for Students with Disabilities in Higher Education: From the Editor	109
<i>Roger D. Wessel</i>	
PASSing College: A Taxonomy for Students with Disabilities in Postsecondary Education	111-122
<i>Lyman L. Dukes III</i>	
<i>Joseph W. Madaus</i>	
<i>Michael Faggella-Luby</i>	
<i>Allison Lombardi</i>	
<i>Nicholas Gelbar</i>	
The Effects of Professional Development on Universal Design for Instruction on Faculty Perception and Practice	123-139
<i>Hye Jin Park</i>	
<i>Kelly Roberts</i>	
<i>Danielle Delise</i>	
Accommodations and Support Services for Students with Autism Spectrum Disorders (ASD): A National Survey of Disability Resource Providers	141-156
<i>Kirsten R. Brown</i>	
Breaking Barriers and Building Bridges: Understanding How a Student Organization Attends to the Social Integration of College Students with Disabilities	157-172
<i>Christa S. Bialka</i>	
<i>Danielle Morro</i>	
<i>Kara Brown</i>	
<i>Gregory Hannah</i>	
Differences Between Students With and Without Disabilities in College Counseling	173-184
<i>Lindsay C. Varkula</i>	
<i>James D. Beauchemin</i>	
<i>Sandra D. Facemire</i>	
<i>Emily C. Bucher</i>	
Double Time? Examining Extended Testing Time Accommodations (ETTA) in Postsecondary Settings	185-200
<i>Laura Sokal</i>	
<i>Laurie Anne Vermette</i>	
Promoting Positive Transition Outcomes: Effective Planning for Deaf and Hard of Hearing Young Adults (Book Review)	201-202
<i>Bentley Fink</i>	
Author Guidelines	203-204

A Taxonomy for Students with Disabilities in Higher Education: From the Editor

It is not every day that you come across a taxonomy, especially one that aids your understanding of a concept that you have worked diligently to comprehend. Taxonomies describe, identify, and classify structures; they organize content, provide structures that increase understanding, and offer systems that identify patterns that bring order.

Benjamin Bloom's (1956) *Taxonomy of Educational Objectives* provides an example of the power of a taxonomy; it is a standardized categorization of learning objectives in educational contexts. The team with whom Dr. Bloom worked identified three spheres of educational activities or learning: cognitive, mental skills related to knowledge; affective, feelings or emotion attitudes of self; and psychomotor, manual or physical skills. Frequently referred to as KSA's (knowledge, skills, and attitudes), the taxonomy helps us understand the learning process, and adapt our education processes and training to make them more effective.

The lead article in this issue provides a taxonomy for students with disabilities in postsecondary education. *The Postsecondary Access and Student Success (PASS)* taxonomy in postsecondary education provides a categorization of the literature for college students with disabilities. Much of the literature reviewed for this taxonomy may be found in previous issues of this journal, the *Journal of Postsecondary Education and Disability*. The authors, **Lyman Dukes III (University of South Florida St. Petersburg)**, **Joseph Madaus (University of Connecticut)**, **Michael Faggella-Luby (Texas Christian University)**, and **Allison Lombardi and Nicholas Gelbar (University of Connecticut)**, an astute association of postsecondary education authors, often cited among the literature related to college students with disabilities, categorize the literature into four domains: student-focused support, program and institutional-focused support, faculty and staff-focused support, and concept and systems development.

The second article provides an overview of four individual faculty cases related to professional development focused on University Design for Instruction (UDI). **Hye Jin Park, Kelly Roberts, and Danielle Delise, all from the University of Hawaii at Manoa**, provide a qualitative follow-up study which was conducted to see how faculty implemented UDI principles and strategies. The next article introduces a national survey of disability resource provides related to accommodations and support services for students with Autism Spectrum Disorder (ASD). **Kirsten Brown, from the University of Wisconsin-Madison**, explores enrollment trends of students with ASD and the types of reasonable accommodations and support services offered to those students.

In the fourth article, **Christa Bialka, Danielle Morro, Kara Brown, and Gregory Hannah, all from Villanova University**, report on how a student organization deals with the social integration of college students with disabilities. This qualitative study examines the social experiences of college students with physical disabilities who participated in LEVEL, a student organization that aimed at creating accessible social experience for students with all abilities and educate students and the broader community about ableism. The next article describes difference between students with and without disabilities in college counseling. **Lindsay Varkula (The Ohio State University)**, **James Beauchemin (Florida Atlanta University)**, **Sandra Facemire (The Ohio State University)**, and **Emily Bucher (Holistic Consultation)** reported that although no differences between students with and without disabilities were found, students with disabilities are a diverse group requiring special consideration in college counseling settings.

Extended testing time accommodations (ETTA) are a common accommodation used by disability educators and faculty members. **Laura Sokal, from the University of Winnipeg**, and **Laurie Anne Vermette, from the University of Manitoba**, found that commonly accepted recommendations about appropriate durations of accommodations were not suitable in meeting individual students' needs and that students used more time on these accommodations as they moved through their first three years of postsecondary programs. The issue concludes with **Bentley Fink's (University of Texas Austin)** review of *Promoting Positive Transition Outcomes: Effective Planning for Deaf, hard of Hearing Young Adults*, written by Pamela Luft.

The editorial team and review boards believe that the information shared in this issue of the *Journal of Postsecondary Education and Disability* are resourceful for disability services educators as they work diligently with campus colleagues for the common good of all college students.

Roger D. Wessel, Ph.D.
Executive Editor

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PASSing College: A Taxonomy for Students with Disabilities in Postsecondary Education

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Abstract

The study of postsecondary students with disabilities has a relatively short history that largely began with descriptions of programs designed for returning World War II veterans with disabilities and expanded in the 1970s with the advent of Section 504 of the Rehabilitation Act of 1973. Currently, the literature about postsecondary-level students with disabilities is principally descriptive, is published in professional journals reflecting a range of disciplines, and lacks a guiding organizational taxonomy. A taxonomy is particularly useful when organizing, discussing, and conducting research and practice efforts. This article presents a four-domain taxonomy that was developed based upon a comprehensive analysis of the body of literature about postsecondary education and students with disability.

Keywords: College, students with disabilities, taxonomy, postsecondary disability literature

Recent publications on the history of scholarship about postsecondary students with disabilities pursuing postsecondary education report the literature base has neither meaningful breadth nor sufficient depth, particularly in top tier journals (Madaus et al., in press; Peña, 2014). There are an abundance of reasons why the scarcity of evidence-based research is surprising. These include: (a) the improved academic preparation available to secondary-level students with disabilities (Madaus, Shaw, & Dukes, 2010); (b) the growing number of students with disabilities entering postsecondary education (Newman et al., 2011); (c) the significance and impact of federal legislation that has promoted access and opportunity in postsecondary education settings (Shaw & Dukes, 2013); (d) the growth and increasing sophistication of services in college to serve the population (Shaw, Madaus, & Dukes, 2010); and (e) the birth of the student disability services (SDS) profession, as well as a professional organization, journal, and standards and ethical guidelines specific to SDS and matriculating students (Association on Higher Education and Disability,

2014; Dukes, 2011). Indeed, students and families have made important progress in collaboration with the scholarly community, policy makers, and secondary and postsecondary personnel. Hence, taken at face value, it is challenging to reconcile the divide between the lack of sufficient scholarly evidence and improved student opportunity, participation, and outcomes. In response, the current authors deliberated the following two questions:

- How do we frame scholarly efforts in the field of postsecondary education and disability?
- Do we know what works for students with disabilities in postsecondary education?

The gap in translating research to practice and validating what works is a persistent challenge, both at the secondary and postsecondary level (Shaw & Dukes, 2013; Test et al., 2009). The current literature mapping project, which was inspired by the notable work on the identification of transition-relevant evidence-based practices in secondary educational set-

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tings conducted by the National Secondary Transition Technical Assistance Center ([NSTTAC]; Test et al., 2009), arose from the second of the previously noted questions: Do we know what works for students with disabilities in *postsecondary* education? In short, the answer is no; at this time we cannot say with sufficient confidence we know what works (Madaus, Faggella-Luby, & Dukes, 2011b). However, there is certainly enough scholarly evidence to advance the discussion regarding what *may* work and, furthermore, how we might also utilize the extant and future professional literature to effectively address the aforementioned critical questions.

Published scholarly work has the potential to shape professional practice (Peña, 2014). Peña noted that both the language used and the topics discussed have the power to “construct” our reality (p. 31). Given these tenets, Peña examined the published research on college students with disabilities in four top tier journals in higher education since the passage of the Americans with Disabilities Act in 1990. Peña was particularly interested in whether top tier higher education journal publications have kept pace with the growth in the population of students with disabilities in postsecondary education. Across a twenty-year period the four journals examined included a total of 2,308 published articles. The periodicals included in the analysis were *The Journal of Higher Education*, *Research in Higher Education*, *The Review of Higher Education*, and *The Journal of College Student Development*. Only 25 of the 2,308 (1.08%) specifically addressed students with disabilities. Further, twenty-one of these 25 articles (84%) were published solely in *The Journal of College Student Development*.

In a similar exploration of published research, Madaus and colleagues (in press) examined all relevant literature specific to college students with disabilities spanning the years 1951 to 2012. The investigation included 1,036 articles across 233 different journals. As in the Peña study, a paucity of research was found. Of the 233 journals, 221 (95%) published ten or fewer articles, and 158 (68%) included only one or two articles. Conversely, 347 articles on disability in postsecondary education (33.5% of the total) have been issued by two journals: *The Journal of Learning Disabilities (JLD)* and *The Journal of Postsecondary Education and Disability ([JPED]*; formerly *The AHSSPPE Bulletin*). *JLD* focuses specifically on learning disabilities and includes research across a number of fields, disciplines, and education levels (e.g., K-12 and postsec-

ondary education). From 1980 to 2012, *JLD* published 64 articles (6.2% of the total examined) on disability in higher education. However, the greatest number of articles (n=283, 27.3%) was published in *JPED*, the official journal of the Association on Higher Education and Disability (AHEAD). *JPED*'s near singular focus is the publication of literature highlighting disability and postsecondary education. Because publications on disability have been concentrated within a few specialized journals logic suggests that, as a result, exposure to it beyond disability specialists has likely been limited. In fact, of the eight journals that published the most articles on disability and postsecondary education, only two were higher education professional journals other than *JPED*, including the *Journal of College Student Development* and *College Student Journal*. The remaining journals were intended for special education researchers and practitioners who primarily focus on K-12 education, transition to postsecondary education, and vocational rehabilitation.

Madaus and colleagues (in press) also analyzed the postsecondary disability literature for topics, methodologies, samples, publication venues, and trends over time. The majority of articles were about students with disabilities followed by articles on disability-related student support programming. Additionally, most of the publications were data based and descriptive in nature. Of particular import, the authors developed a structure for organizing the extant and future postsecondary disability literature base in order to conduct these analyses. This structure, which, going forward will be referred to as a taxonomy, is the focus of this article.

What is a Taxonomy?

The origins of the term taxonomy date back to Aristotle, and can be defined as a scheme for classification. Historically, taxonomies have been particularly utilized in the classification of organisms. Over time, the term has evolved and is employed in multiple disciplines. The use of taxonomies in education has a rich history, with Bloom's taxonomy (Bloom, 1956) perhaps the most well known. In special education, scholars have also directly applied (Kohler, 1996) or implied (e.g., Halpern, 1994; Will, 1984) various taxonomies as a means of organizing, discussing, and researching secondary-level transition intervention services (Cobb & Alwell, 2009).

Taxonomy for Secondary Education

The taxonomy has proven to be especially useful in the field of secondary special education and transition. Eichelberger (1989) noted that an organizational model or taxonomy “would be important in describing the various theoretical and practical phenomena in a way that makes sense to the end-user, be they educators, policy-makers, service providers, researchers, or families” (Kohler, 1996, p. 5). For example, Kohler developed the Taxonomy for Transition Programming (TTP), also colloquially referred to as the “Kohler Taxonomy,” which is a tool for codifying secondary-level transition practices. It provides end-users a medium for organizing, discussing, and conducting research and practice efforts.

The TTP was designed to be a model of secondary-level transition practices that result in positive post-school outcomes for students with disabilities. It was developed as part of a four-study process whose overarching goal was the identification of evidence-based transition-focused educational practices (Kohler, 1996). The first three studies included a review of relevant transition literature, an examination of transition programs that had been identified as exemplary, and a meta-evaluation of model demonstration transition program activities and outcomes, while the final study resulted in a model, or concept map, of the identified practices. The result was the TTP, which includes the following five domains: Student-Focused Planning, Student Development, Interagency Collaboration, Family Involvement, and Program Structure. Moreover, it has become a commonly referenced framework for the planning, implementation, and evaluation of transition programming at the secondary-level (Family Empowerment Disability Council, 2011).

McEathron, Beuhring, Maynard, and Mavis (2013) recently developed a taxonomy that spells out the postsecondary education program options for students with intellectual and developmental disabilities (IDD). Its emphasis is on what program characteristics can be observed. These programs, in some cases, result in participating students being dually enrolled in both a secondary school and a postsecondary education program. A two-phase process was employed to develop the taxonomy. First, the authors employed a case study approach that included interviewing SDS staff and directors with the results being used to develop a pilot taxonomy. Next, the findings were validated using an online survey in which respondents addressed whether elements of the taxonomy applied to their particular program for students with IDD. The

outcome was the Postsecondary Education for IDD taxonomy made up of the following 4 domains: the Organizational domain, the Admissions domain, the Support domain, and the Pedagogical domain. According to the authors, it is intended to outline the characteristics of postsecondary programs for students with IDD in order to promote program understanding and to elucidate the similarities and differences among the many programs nationwide.

The field of postsecondary education and disability does not have a similar organizing structure that can be applied to practices for and research about traditionally matriculating college students with all types of disabilities. As the field continues to evolve, both in regard to research and practice, an “organizing heuristic” (Kohler & Field, 2003) around which researchers and practitioners can better communicate about and link their efforts will facilitate more clarity in research, more effective postsecondary professional practice and ideally, also promote student success.

Method

In order to map the literature on postsecondary education and students with disabilities (Madaus et al., in press), a means of organizing the study topics and themes was necessary. The study team, made up of the five current authors and two students in a higher education and disability doctoral program, began by reviewing more than 80 *JPED* publications, the primary scholarly outlet for research on postsecondary education and disability, spanning the years 2000 to 2010. These publications were chosen as they broadly reflect the literature base on college programming and students with disabilities. Based upon this review, the work group generated an initial set of broad content domain titles, and corresponding subdomain sets judged to be appropriately reflective of the literature investigated. Subsequently, the domains and subdomains were submitted to two recent *JPED* editors for review with the goal of capitalizing on their detailed and extensive knowledge of the relevant literature.

Next, the work group examined 10 issues of *JPED*, followed by a group debriefing, in order to determine how well each discrete publication fit the draft domains and subdomains. This process resulted in a number of revisions including collapsing domains, domain name revisions, and the modification of sub-domain categories, which resulted in greater topical specificity within the framework.

To authenticate the modified framework, the research team again evaluated the draft taxonomy by mapping an additional five issues of *JPED*. Further refinement of the four domains and corresponding subdomains and their definitions followed. At this time, criteria were also refined to clarify precisely what literature was eligible for inclusion and what literature was to be excluded. Upon completion, inter-rater agreement among the work group reviewers was 100%. Concurrently, an additional 500 articles were collected from sources other than *JPED*. These articles were collected from an initial Boolean search, were published from 1980-2012 and were from a variety of journals including *Exceptional Children*, *Journal of Learning Disabilities*, *Journal of Vocational Rehabilitation*, *Journal of College Student Development*, and *Journal of College Student Counseling*. This literature allowed the work group to broaden its perspective of postsecondary education for students with disabilities, and subsequently led to additional refinement of the sub-domains.

Finally, in order to validate the content of the resulting four domains, the domain definitions, and corresponding subdomains, the draft taxonomy was reviewed by a panel of eight former editors or co-editors of *JPED*. Panel members were asked to do the following: Using a 4-point Likert scale, the panel rated the extent to which the definitions were clear, the extent to which the subdomains were sorted into the appropriate domain, and they also provided qualitative comments regarding whether additional domains or subdomains were necessary. The panel either “agreed” or “strongly agreed” with both the domain definitions and domain/subdomain correspondence. A number of suggestions were made regarding missing sub-domain content and sub-domain term clarification (e.g., should legal compliance be defined as a program or institutional charge) and were reviewed by the work group.

Next, a systematic literature search was conducted by the study team (see Madaus et al, in press). The inclusion criteria for this review were that the article be about postsecondary education for students with disabilities (broadly considered to include students, faculty, disability services programs and personnel, and emerging constructs and models related to service delivery or assessment). In addition, the article had to address: (a) programs and services for accepted students into degree-granting programs at a two- or four-year college or university, (b) programs, ser-

vices, or experiences of matriculated students, or (c) the experiences of students who had withdrawn from or graduated from a degree granting program at a two- or four-year college or university. Articles about secondary students in transition, transition-aged programs, and non-matriculated students were excluded. The results of this review are reported elsewhere, but it is important to note that 1013 of the 1036 articles fit into the taxonomy (97.8%). Articles that did not align with the taxonomy (2.2%, or $n=23$) included topics such as disability and higher education testing agencies, interviews with researchers studying disability and higher education, or descriptions of disability-studies programs.

The *PASS* Taxonomy

The *Postsecondary Access and Student Success (PASS)* taxonomy for postsecondary education and students with disabilities is a tool for organizing and examining the extant and future literature base on postsecondary level students with disabilities. The resulting taxonomy has a four-domain structure, with corresponding subdomains, that holistically reflect topics addressed in the current literature base. The *PASS* taxonomy is provided in Figure 2 and further described below. Over the project duration, the titles of the four domains have changed slightly to reflect the evolving nature of the taxonomy development. While both the current and former domain titles reference the identical literature base, the names have been altered to clarify related research and further distinguish among domains. The domain titles presented in this section are the current names with reference to the former titles included as well.

Domain 1: Student-Focused Support

The Student-Focused Support domain (initially titled “Student-Level Studies”) addresses the experiences and/or perceptions at the level or unit of analysis of students with disabilities in (and after) higher education. Student-focused articles made up 42.5% of all published articles, and included twelve subdomains, which serve the purpose of defining the domain in greater detail and to also allow end-users of the taxonomy to aggregate their practices or research into the various subdomain categories. Examples of topical areas that fall under the domain include the perceptions and experiences of students with disabilities in postsecondary education, student demograph-

ic profiles, the teaching and application of learning strategies or assistive technology, career readiness, and use of accommodations. It is worthwhile to specifically highlight the self-determination subdomain given that the responsibility for disability disclosure and request for services at the postsecondary level rests entirely with the postsecondary student (Madaus, 2010). While secondary-level special educators and corresponding research certainly highlight the significant importance of self-determination practices (Kellems & Morningstar, 2010), professionals at the postsecondary-level should continue to promote the development and use of such student-focused skill sets as problem-solving, goal setting, self-regulation, and self-advocacy (Dukes & Shaw, 2008; Madaus, Faggella-Luby, & Dukes, 2011a). Other specific subdomain titles are provided in Table 1.

Domain 2: Program and Institutional-Focused Support

The Program and Institutional Support domain (initially titled “Program or Institution Level Studies”) addresses service provision by the SDS in a higher education institution and also includes institutional policies and procedures that pertain to college students with disabilities. Slightly more than 28% of all published articles were categorized in this domain. Its fourteen subdomains include topical areas such as SDS policies and procedures, both general and student cohort specific program development, legal compliance, program evaluation, and SDS collaboration with other campus services, faculty, and academic programs (See Table 1 for additional subdomain areas). SDS program evaluation is a Program and Institutional Support subdomain that has received significant attention among disability service experts (Dukes, McGuire, Parker, Refsland, & Reustle, 2007). Evaluation of college and university divisions and departments has become increasingly prevalent in more recent years. Typically, program evaluation results are used to make decisions about budget allocation and the growth or contraction of campus programs (Dukes, 2011). For example, literature on the Council for the Advancement of Standards program evaluation standards and guidelines (Dean, 2006) and the iEvaluate Office for Students with Disabilities guidelines and exemplars (Dukes, 2011) are categorized within the evaluation subdomain and available for use as an SDS assessment tool. Postsecondary professionals leading SDS programs are encouraged to make note of the importance of the evaluation subdomain.

Domain 3: Faculty and Staff-Focused Support

The Faculty and Staff -Focused Support domain (initially titled “Faculty/Non-Disability Support Staff-Level Studies”) addresses the knowledge, attitudes, and beliefs of faculty and non-disability services personnel (e.g., student affairs generalists) to enhance access to higher education for students with disabilities. Thirteen percent of published articles were categorized within this domain. It includes education and support for faculty and staff and its subdomains include campus staff practices, development and training, and knowledge, attitudes and beliefs; and faculty teaching practices, development and training, and knowledge, attitudes, and beliefs. As student success metrics have increased in importance on college campuses nationwide, campus staff attitudes, knowledge, and practices about students with disabilities have taken on increased importance. With improved knowledge and use of effective practices, personnel campus-wide can better promote student retention and graduation. For example, tools for assessing faculty and staff awareness (e.g., Inclusive Teaching Strategies Inventory [ITSI]; Lombardi, Murray, & Gerdes, 2011) are a component of this subdomain and professionals are encouraged to make use of practices of this nature.

Domain 4: Concept and Systems Development

The Concept and Systems Development domain (initially titled “Construct Development”), addresses the development, evaluation, or validation of a variable. To be included in this domain, the variable must be under proposal, in development, or being used in practice to gather empirical evidence. Its subdomains include assessment instruments, conceptual models/discussion of issues in disability services, conceptual models of service delivery, conceptual models of instruction/assessment of learning, evaluation metrics or methods, and standards of practice, performance, or ethics (See Table 1). It is important to point out that systems or concepts included within this domain may eventually be appropriate for placement in another domain once the variable under development or study reaches a point at which there is a reasonable amount of evaluative evidence of their efficacy. For example, literature on the use of universal design practices in higher education proliferates. However, the vast majority of the publications are descriptive in nature, not evaluative (Madaus et al., in press; McGuire, 2014; Roberts, Park, Brown, & Cook, 2011). While such practices have been encouraged in the literature, until

such time that consistent evaluative evidence exists for their efficacy, the practice will remain categorized within the Systems and Concept Development domain. Thirteen percent of all manuscripts were categorized in this domain. An overview of the *PASS* domains and corresponding subdomains is provided in Table 1.

Discussion

PASS is the product of an extensive literature mapping process conducted with the input of a range of experts on research on students with disabilities and postsecondary education. As noted earlier, the *PASS* taxonomy is intended as an “organizing heuristic” (Kohler & Field, 2003) around which we can organize, discuss, and research topical areas relevant to college students with disabilities pursuing postsecondary education. Its four domains include *Student-Focused Support*, *Program and Institutional-Focused Support*, *Faculty and Staff-Focused Support*, and *Concept and Systems Development*. The subdomains allow for the categorization of specific practices relevant to promoting student participation and matriculation in college for students with disabilities. We believe that having a model around which to organize should allow for the continuation of the field’s movement beyond theory toward enhanced articulation and application. Next, let us consider the two aforementioned questions that led to the development of the *PASS* taxonomy.

How do we frame scholarly efforts in the field of postsecondary education and disability?

Currently, there is no formal method by which our scholarly efforts are organized. However, a conceptual tool for organizing the development and delivery of practices for students with disabilities, and in this case, college students, would serve a number of constructive purposes (Kohler & Field, 2003). As noted, the existing research base on postsecondary education and students with disabilities is wide ranging and has been published in hundreds of journals. Even so, the majority of these publications have primarily been published in specialty journals designed for professionals that specifically serve students with disabilities. This reality presents a challenge to many end-users while also demonstrating that there is an array of professionals who have an interest in higher education for students with disabilities. An organi-

zational tool should help to direct attention to practices designed to promote participation in and completion of college for students with disabilities. That is, it has the potential to better communicate specific practitioner and institutional practices that have the greatest potential for promoting student degree completion. Moreover, it can highlight areas in which practices have been studied and proven to be effective and areas in which more research is merited. Perhaps, in time, the use of proven practices can become the standard by which instruction, services, and supports are selected and employed in postsecondary settings to promote matriculation.

As the TTP (Kohler, 1996) has demonstrated, a framework for structuring research and practice efforts in K-12 special education can have a profound impact. As noted, it has become a tool for end-users as well as scholars conducting research. A number of significant studies have since employed the TTP. For example, Kellems and Morningstar (2010) documented effective and evidence-based secondary-level transition practices, or tips, structured around TTP, with the intent of sharing concepts with practitioners. Cobb and Alwell (2009) conducted a systematic review of secondary-level transition practices using TTP as a framework for organizing the findings of their evaluation. Recently, NSTTAC (Test et al., 2009) conducted a set of systematic literature reviews and Haber et al. (2016) conducted a meta-analysis to identify evidence-based practices for secondary transition. Again, their results employed use of the TTP. *PASS* may serve as a similar organizational tool for the field of postsecondary education and disability.

Do we know what works for students with disabilities in postsecondary education?

Shaw and Dukes (2013) recently called for the development and use of evidence-based practices in the transition to postsecondary education. This call must now be extended *into* the postsecondary education setting. That is, the development and use of evidence-based practices that best promote successful college completion are warranted. Given the current focus in higher education on accountability metrics tied to institutional funding that include improving institutional graduation rates, timeliness to graduation, and, in some cases, average earned salaries by recent graduates, personnel campus-wide have a responsibility in assisting all students in meeting their college objectives (Lombardi et al., 2016).

Madaus et al. (in press) comprehensively evaluated the literature on higher education and disability and came to a number of significant conclusions. First, 60% of articles presented original data, however, the vast majority only presented descriptive data. In fact, just 6% examined interventions that tested causality. Additionally, Madaus et al. noted concerns with sample descriptions. Less than 20% of studies about students clearly reported race/ethnicity data and 25% of studies about students with disabilities did not provide data regarding disability type. Without a substantial increase in empirical studies employing rigorous methods the postsecondary education and disability field will remain limited in its ability to move toward the development and application of empirically validated practices.

Preliminary findings¹ associated with the *PASS* Taxonomy indicate substantial disparity in the research literature on postsecondary education for students with disabilities. Consider, for example, that the largest number of articles (42.5%) is associated with the Student-Focused Support domain. At face value, this may appear encouraging; the corpus of studies should reflect a significant unit of analysis associated with students with disabilities. However, the taxonomy subdomains reveal that the breakdown of studies within the domain ($n=440$) is comprised mainly of student experiences ($n=260$) and descriptive student profiles or statistics ($n=147$). In fact, the Student-Focused Support domain includes a relatively small number of studies related to areas associated with supporting student outcomes (including access) ($n=89$), learning and study skills ($n=50$), self-determination ($n=35$), and technology ($n=33$). Clearly, one of the benefits of the taxonomy is the illumination of a paucity of significant research associated with these critical skills and strategies. Moreover, this is cause for significant concern if the field's goal is the use of evidence-based practices in postsecondary education for students with disabilities.

With respect to the Program and Institutional-Focused Support articles ($n=297$), the largest number describes disability service programs ($n=128$) or policies and procedures ($n=78$). This domain is perhaps the single largest variable in the success or failure of students with disabilities in postsecondary education and the Madaus et al. (in press) subdomain coding clearly illustrates a lack of necessary evaluation or rigorously designed empirical studies to measure the impact of program and institutional support structures on student outcomes.

Finally, within the Faculty and Staff-Focused Support literature ($n=139$) that addresses service delivery provided for students beyond the SDS or program and institution-level and instead through other institutional supports (e.g., academic advising, student housing) there are only 49 total studies focused upon institutional staff. Further, studies of faculty are predominantly concerned with little beyond their reported knowledge of disability-relevant topics ($n=105$). While studies of knowledge can have benefit in that they may highlight understanding of disability-relevant legislation or spotlight faculty training needs, they do not necessarily translate into enhanced faculty use of pedagogically appropriate practices that meet the needs of all postsecondary students, including students with disabilities.

While few, if any, evidence-based practices exist in the postsecondary education and disability literature, there are a few promising practices of note. Some evidence of promise was noted across a few studies that examined learning and study skills, self-determination, assistive technology, mentor programs, and faculty training models. Examination of these practices is beyond the scope of the current manuscript and are being addressed in future publications. However, it is again reasonable to conclude that researchers must employ rigorous study designs, and frankly, conduct significantly more empirically-based research if we are going to begin to scientifically determine what works for students with disabilities in postsecondary education.

Yet again, our K-12 counterparts might serve as a model for the development, identification, and use of evidence-based practices. While the current authors do not advocate passage of legislation mandating the use of evidence-based practices in higher education, federal grant initiatives of the type that funded the What Works Clearinghouse (WWC) as a means of documenting K-12 level scientifically validated practices could serve as a significant step forward. The U.S. Department of Education recently funded the National Center for Information and Technical Support for Postsecondary Students with Disabilities. The program is designed to provide technical support regarding promising practices for students with disabilities entering or completing postsecondary education. It remains to be determined what impact the program may have, however its very existence is recognition of the interest in identifying and employing promising practices in higher education. Finally, as has been

done in secondary settings, the *PASS* taxonomy can serve as a means of organizing, discussing, and researching potential scientifically valid practices.

Limitations

Results of any investigation should be considered in light of potential limitations, and the current examination is no exception. Participant knowledge of the concept being developed significantly enhances the likelihood of content validity. The development, structure, and labeling of taxonomy domains and subdomains was completed by the research panel and with input from a panel of former *JPED* editors. The research panel was made up of persons with considerable expertise regarding postsecondary education and disability. Additionally, the eight-member *JPED* panel, while not randomly selected, was also comprised of experts on the relevant topical areas. The *PASS* domains and corresponding subdomains should be considered the result of the entire group's perception of their importance and comprehensiveness.

Clarity and comprehensiveness can also be a potential limitation in an examination of this nature. Every effort was made to ensure the taxonomy reflects the universe of content. It was developed as part of a comprehensive study of literature relevant to the matriculation of college students with disabilities spanning more than 50 years. It is possible some publications on the topic were not found in the search and screening process, however, every attempt was made to minimize this possibility. A range of databases and a comprehensive set of search terms were employed. Additionally, an iterative process was used when developing and naming the both the domains and subdomains that make up *PASS*.

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Footnote

¹ The number of subdomain articles can be greater than the domain article total because articles could be coded in more than one subdomain.

Table 1

PASS Domains and Subdomains

Domain	<i>Student-Focused Support</i>
<i>Subdomains</i>	<ul style="list-style-type: none"> • Access (physical, cognitive, attitudinal) • Assistive technology use • Career development • Experiences, perceptions, knowledge, attitudes, or beliefs of students with disabilities • Learning/using study skills, learning strategies • Mainstream technology use • Meeting institutional requirements • Post-undergraduate program experiences and/or outcomes • Profiles of students • Requesting or using accommodations • Self-determination skills • Statistics on students with disabilities
Domain	<i>Program and Institutional-Focused Support</i>
<i>Subdomains</i>	<ul style="list-style-type: none"> • Collaboration with faculty or academic departments • Collaboration with other campus services • General or specific descriptions of disability programs or components • Institutional Policies/Procedures • Experiences, perceptions, knowledge, attitudes, or beliefs of disability service providers • Legal Compliance • Program development • Programs for incoming students • Programs for students transitioning to graduate school or employment • Programs for specific cohorts of students • Policies and procedures • Professional development/training for disability services staff • Program evaluation • Program fit within the institution
Domain	<i>Faculty and Staff-Focused Support</i>
<i>Subdomains</i>	<ul style="list-style-type: none"> • Campus staff development and training • Campus staff knowledge, attitudes and beliefs • Campus staff practices • Faculty development and training • Faculty knowledge, attitudes and beliefs • Faculty teaching practices
Domain	<i>Concept and Systems Development</i>
<i>Subdomains</i>	<ul style="list-style-type: none"> • Assessment instruments • Conceptual models or discussion of issues in disability services • Conceptual models of service delivery (e.g., Universal Design) • Conceptual models of instruction/assessment of learning • Evaluation metrics or methods • Standards of practice, performance or ethics

Figure 1. Article Selection Flow

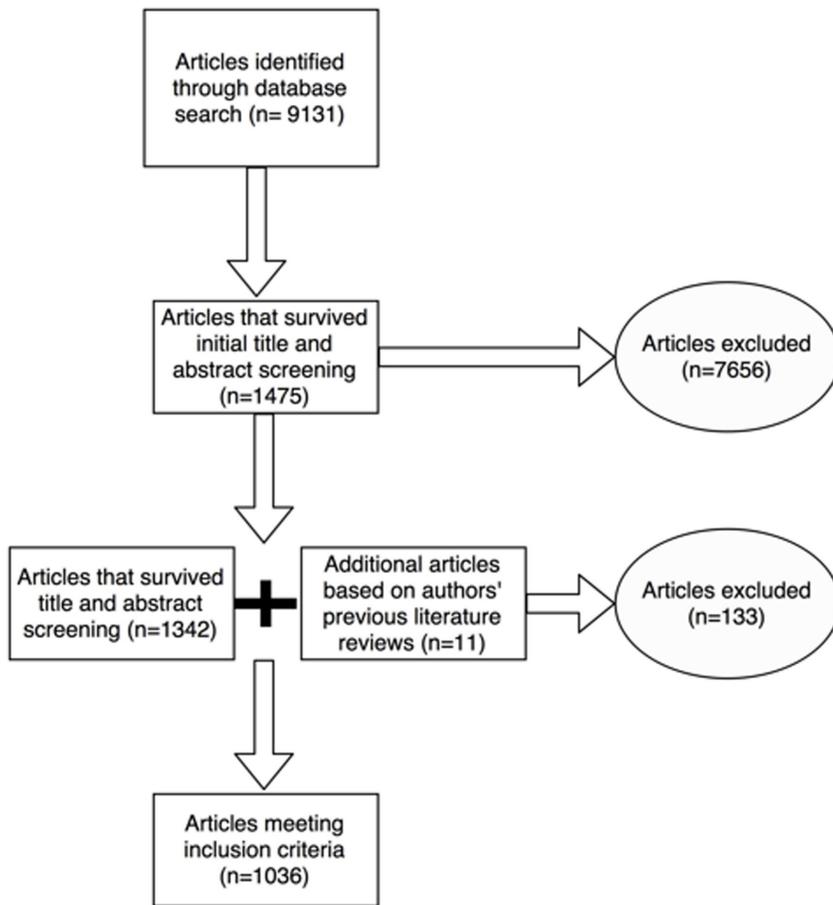
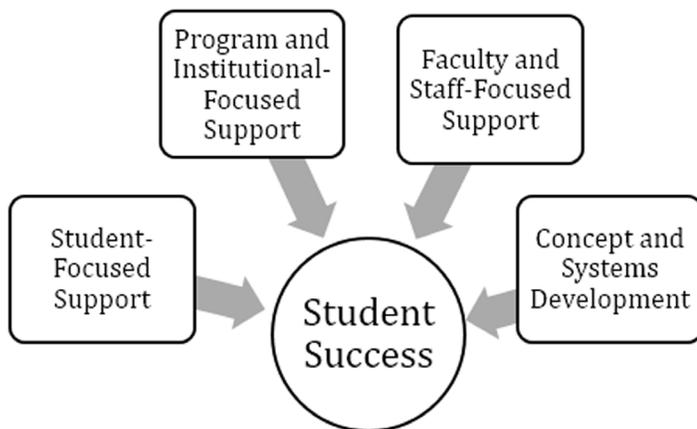


Figure 2. Taxonomy for Postsecondary Access and Student Success (PASS)



The Effects of Professional Development on Universal Design for Instruction on Faculty Perception and Practice

Hye Jin Park¹
Kelly Roberts¹
Danielle Delise¹

Abstract

The authors conducted professional development (PD) for university personnel, focused on Universal Design for Instruction (UDI), over three days during a summer institute. The UDI-focused PD provided 20 hours of training across six content areas: (a) UDI, (b) accessible distance education and assistive technology, (c) student and faculty rights and responsibilities, (d) disability culture, (e) hidden disabilities, and (f) multiculturalism and disability. During the semester following the PD, a qualitative follow-up study was conducted to investigate faculty's implementation of UDI principles and strategies. Four individual faculty cases were analyzed to investigate the ways in which faculty applied UDI principles and strategies. Then, the cases were compared to detect patterns, and identify themes that explain variation in faculty's UDI implementation (Patton, 2015; Stake, 2000, 2006). Three interrelated themes emerged as potential factors influencing faculty's level of UDI implementation: the extent to which faculty (a) conceptualize UDI as an ongoing endeavor (versus a finite, achievable state); (b) engage in self-reflection; and (c) internalize a social model of disability. Implications for practice are discussed.

Keywords: Universal design for instruction, UDI, faculty professional development, case studies, cross case analysis

The postsecondary student population is becoming more diverse, reflecting an increase in historically underrepresented students, including students with disabilities (SWD). For instance, approximately 11.1% of undergraduate students report a disability. Of these students reporting disabilities, 42% are from culturally and linguistically diverse backgrounds and 6.9% are veterans (National Center for Educational Statistics, 2013). Although rates of enrollment of SWD are on the rise, low postsecondary completion rates among SWD remains a serious concern. For instance, only 34% of SWD enrolled in four-year colleges completed their degrees within eight years of high school graduation, compared to 51% of their peers (Newman et al., 2011). Improving postsecondary retention and completion rates among underrepresented students has become a national priority. Ensuring underrepresented students' postsecondary success requires a transformation of postsecondary curricula, pedagogical practices, and institutional culture

(Block, Loewen, & Kroeger, 2006; Pliner & Johnson, 2004). Thus, stakeholders are calling upon colleges and universities to provide innovative instruction that is both accessible and responsive to diverse learners, including SWD (Burgstahler, 2008; Ouellett, 2004). Universal Design for Instruction (UDI) is a framework with promise to help accomplish this aim, through the design of instructional environments that are responsive to a broad range of student strengths and abilities.

Literature Review

Universal Design Concept

The concept of Universal Design (UD) first emerged in architecture, in response to changes in federal legislation brought about by the barrier free and disability rights movements (Story, Mueller, & Mace, 1998). Coined by Ronald Mace, the concept holds that the design of physical environments, products, and communications should anticipate the needs

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of all potential users - regardless of age or ability - and seamlessly integrate accessibility into all aspects of design and planning (Center for Universal Design, 1997). By planning for human diversity in abilities for cognition, vision, hearing, speech, body function, and mobility, the designer maximizes usability for a broad spectrum of potential users (Story et al., 1998). Seven principles guide the UD of physical environments: (a) equitable use, (b) flexibility in use, (c) simple and intuitive use, (d) perceptible information, (e) tolerance for error, (f) low physical effort, and (g) size and space for approach and use (Center for Universal Design, 1997).

UD in Postsecondary Education

In postsecondary educational settings, the concept of UD also extends to student services, curriculum design, and pedagogical practice (Higbee, 2009). Since the late 1990's, educational researchers have elaborated frameworks for infusing the principles of UD into educational practice. Prominent frameworks include Universal Instructional Design ([UID]; Silver, Bourke, & Strehorn, 1998), Universal Design for Learning ([UDL]; Rose & Meyer, 2000), and Universal Design for Instruction ([UDI]; Scott, McGuire, & Shaw, 2001). Although distinguished by different theoretical assumptions and therefore practices, these frameworks share a common intellectual history and shared goal of promoting accessible curricula and inclusive pedagogies (Orr & Hammig, 2009). While the authors recognize the strengths of each UD framework, the framework selected for use in the present study is Universal Design for Instruction (UDI). Based on prior collaborations with faculty, the researchers anticipated that faculty would feel motivated to utilize a UD model and UD resources specifically designed for a faculty audience. The UDI framework was developed and elaborated for use in higher education, and UDI developers actively maintain a UDI website designed for a faculty audience.

UDI offers a pedagogical framework through which faculty reflect on their instructional practice and proactively design and implement more inclusive curricula and pedagogies. A central premise of UDI is that the "planning and delivery of instruction, as well as the evaluation of student learning outcomes can incorporate inclusive attributes that anticipate diversity in learners without compromising academic standards" (McGuire, Scott, & Shaw, 2006, p. 169). Following a review of the literature on best practic-

es for SWD and in postsecondary education, Scott, McGuire, and Shaw (2001) adapted the Center for Universal Design's UD principles to postsecondary instruction, and also added two principles. The nine principles of UDI include: (a) equitable use, (b) flexibility in use, (c) simple and intuitive, (d) perceptible information, (e) tolerance for error, (f) low physical effort, (g) size and space for approach and use, (h) a community of learners, and (i) instructional climate.

Need for UD-Focused Professional Development

The relevance of UD to postsecondary education has received considerable support over the past decade. For instance, in order to improve SWD's rates of postsecondary retention and completion, the 2008 Reauthorization of the Higher Education Opportunity Act (HEOA) calls for the development of innovative teaching methods, strategies, and curricula consistent with UD principles. However, in order to actualize the application of UD principles in postsecondary classrooms, faculty need professional development (PD). Cook, Rumrill, and Tankersley (2009) surveyed 307 university faculty regarding their instructional priorities and behaviors, and found that UDI practices are not widely implemented. Specifically, respondents identified knowledge of assistive technology, responsiveness to diverse learning styles and abilities, and the provision of course materials in varied formats, as areas of weakness among faculty. In addition, the National Center for Education Statistics (2011) surveyed 1,600 degree-granting postsecondary institutions and found that only 46% of institutions were providing regular faculty training on accessible instruction. In the survey, approximately 52% of respondents identified limited staff resources for faculty training as a barrier to implementing UD (Raue & Lewis, 2011).

Effects of UD-Focused PD on Instructional Practice

Roberts, Satlykgylyjova, and Park (2015) conducted a review of the peer-reviewed literature from 2000 through 2014 and identified 19 research articles focusing on the application of UD principles (e.g., UID, UDL, and UDI) in postsecondary instruction. The majority of studies examined students' perceptions of faculty practice. Results indicated a significant positive association between UD training for instructors and the application of UD principles in participating instructors' courses. Of the 19 studies, two investigated faculty's experiences with UDI implementation. Zhang (2005) examined the effects of

UD-focused PD for in-service teachers, pre-service teachers, and college faculty. Through a case study of participant feedback, he found that participants recognized the benefits of UDI and the need to adapt their teaching methods in ways that respond to student diversity. Moon, Utsching, Todd, and Bozzorg (2011) examined faculty experiences with UD implementation. Through a content analysis of faculty journal reflections, Moon et al. identified three broad categories of faculty participants in the UD-focused PD: enthusiasts, skeptics, and incremental adopters.

The present study extends this research on UD implementation through qualitative case studies of four faculty who participated in a UDI-focused PD. We conducted and analyzed four faculty cases to investigate the rich and dynamic nature of faculty learning as a result of implementing UDI principles and strategies during the semester following the PD. We also conducted a cross case analysis to examine and explain the variation in UDI implementation across faculty. The following research questions guided the qualitative inquiry:

1. In what ways did faculty apply UDI principles and strategies during the semester following the PD?
2. What patterns and themes might explain variation in UDI implementation across faculty?

Methods

Setting

The PD and case studies were conducted at a diverse four-year university in the Pacific. During that academic year, enrollment included approximately 20,000 students, of whom approximately 13,000 were undergraduates, 14,000 attended full time, and 2,800 were Pell grant recipients. By race, the majority of students were identified as Asian, followed by Caucasian and Pacific Islander. Approximately 4% of the student body received services from the campus Disability Services Office (DSO) (personal communication, DSO personnel, January 9, 2013).

UDI-Focused PD

The first authors conducted UDI-focused PD in the context of disability studies for three consecutive days during the summer on a university campus. Critical features of the UDI-focused PD included (a) an interdisciplinary curriculum and (b) opportunities for faculty to participate in collaborative learning.

Interdisciplinary curriculum. The PD provided 20 hours of training across six content areas: (a) UDI, (b) accessible distance education and assistive technology, (c) student and faculty rights and responsibilities, (d) disability culture, (e) hidden disabilities, and (f) multiculturalism and disability. These content areas are described in the Appendix. Out of the 20 PD hours, six and one-half hours covered content on UDI. Two and one-half hours were dedicated to faculty training on UDI, including the design of universally accessible distance education. Four additional hours integrated UDI and the design of universally accessible online courses with related content (e.g., characteristics of SWD and UDI access strategies).

Specifically, the UDI curriculum highlighted the guiding principles of UDI (Scott et al., 2001) and emphasized that UDI seeks to enhance student opportunities to successfully meet academic standards, without compromising the integrity of those standards. The curriculum presented the UDI framework and shared strategies that improve information access (e.g., converting print or PDF documents to electronic text) as well as pedagogical strategies consistent with each UDI principle (e.g., use of the pause procedure, frequent feedback, rubrics, and peer collaboration). To facilitate participants' future use of UDI, the curriculum included links to UDI resources as well as guided notes and graphic organizer templates that can be easily adapted for use in postsecondary classes. The UDI focal area concluded with a cautionary reminder that UDI does not replace or diminish SWD's legal entitlement to reasonable accommodations. Next, the design of universally accessible distance education courses was examined in light of laws relevant to online course offerings and U.S. Office of Civil Rights (OCR) guidance. Through vignettes illustrating the experiences of four SWD participating in online courses, the curriculum highlighted assistive technologies that provide high- and low-tech solutions enabling equitable online communications and access. The presenter also challenged participants to design distance education courses that fulfill the spirit of the OCR guidance.

Collaborative learning. Since faculty learning is socially and culturally mediated (Kelly, 2006; Vygotsky, 1978), the PD actively engaged faculty in learning new practices and included opportunities for peer collaboration (Borko, 2004; Desimone, 2011). The PD engaged faculty learning through faculty self-reflection, guided discussions, panel discussions (both support service provider and student panels), and collaborative work on culminating projects.

Sampling Procedure

Recruited through campus-wide advertisements, 16 faculty and staff participated in the PD during the summer. After the PD, all faculty participants were asked to participate in the follow up case study for one full semester, and seven faculty agreed. From the seven follow-up study participants, purposive sampling was used to select cases thought to bring about in-depth understanding about faculty implementation of UDI, both individually and through case comparison (Teddlie & Yu, 2007). Through purposive sampling, this study sought to (a) include cases that reflect diversity in faculty gender, ethnicity, academic discipline, and disability experience; (b) select cases that would be information-rich, and (3) select cases that would be sampled along a continuum of UDI implementation (Patton, 2015). Based on these considerations, four cases comprise this study.

Participant Characteristics

The four faculty participants consisted of two female and two male faculty; two social science, one science, and one health science faculty. Data from the faculty pre-survey indicate that one faculty was novice, and three faculty were experienced in instructing SWD. At registration for the PD, three participants reported that they did not currently apply the principles of UDI in the design of their courses, and one faculty reported that he did.

Data Collection Procedure

Data collection instruments were developed by the first two authors in collaboration with the PD instructors to ensure content validity. Pre- and post-surveys were administered to faculty immediately before and after participation in the PD. Faculty pre- and post- interviews were conducted at the beginning and end of the semester following the PD.

Instruments

Faculty PD pre- and post- surveys. The faculty pre-survey collected background data, including faculty's gender and discipline, previous experience applying principles of UD to course design, and previous experience instructing SWD. Both the pre- and post- surveys collected data on faculty's perceived comfort in instructing SWD, familiarity with accommodations, and professional skills in instructing SWD. Pre-PD to post-PD change on these indicators is reported in Table 1.

Faculty pre- and post- interview protocols.

The pre-interview consisted of five open-ended questions on motivation to participate in the PD and this case study; perceptions of gains from the PD; plans for implementing what they learned at the PD, including UDI; and academic expectations toward students with and without disabilities. The post-interview consisted of 10 open-ended questions on achievement of plans to implement content learned at the PD, including UDI; resources and challenges in the use of the UDI; provision of accommodations; change in competence, skills, and attitudes in instructing SWD; and reflection. Each interview took about 50 minutes and was tape-recorded with the participant's permission. Each tape-recorded interview was fully transcribed for analysis.

Data Analysis Procedure

To investigate the rich and dynamic nature of faculty learning as a result of implementing UDI principles and strategies during the semester following the PD, we analyzed individual cases of the four faculty (research question 1). Findings from the individual case studies are presented in Result 1. Next, we conducted a cross case analysis to detect patterns and identify themes that explain variation in UDI implementation across faculty (research question 2) (Patton, 2015; Stake, 2000, 2006). Findings from the cross case analysis are presented in Result 2.

Result 1 from the Individual Case Studies

Kim

Background. Kim is an experienced full time social science faculty at the four-year university. At registration for the PD, Kim described herself as "very comfortable" in addressing the needs of SWD and diverse learners, and rated her familiarity with SWD's accommodations as "good." She "mostly agreed" that she holds professional skills needed to make her courses accessible to all students. Her motivation to participate in the PD included wanting to know more about prevalent disabilities, keep up to date on current issues, learn about campus resources for SWD, and gain knowledge and experiences that she can share with other faculty.

Following the PD, Kim described her familiarity with SWD's accommodations as excellent, she "mostly agreed" that she holds the professional skills needed to make her courses accessible to all students,

and she reported she was “very comfortable” in addressing the needs of SWD’s and diverse learners. Kim expressed her intent to adopt 51% to 75% of the PD strategies into her instructional practice.

Plans to apply UDI. Kim reported that the UDI pedagogical strategies presented in the PD were ones she was already implementing in her classrooms: “What was good about the workshops is that it affirmed what I was doing was on the right track.” Her description of her plans to apply UDI were exceptionally detailed and suggested a sophisticated understanding of UDI as a means to enhance access, and as a pedagogical practice.

Access strategies. Kim applied UDI principles to improve students’ access to course materials and content. She reported posting electronic copies of handouts on the course website “in case students misplaced [them]” and uploaded a variety of class materials (i.e., video clips, photographs, images, poems, texts, audio files) to the course website, in order to facilitate equitable student access. In doing so, she applied UDI Principle 1, Equitable Use, in that course materials were readily available online, and students who required electronic copies of handouts were not singled out. She also applied UDI Principle 5, Tolerance for Error. Kim planned for individual differences in organizational skills, executive functioning, and pace of learning. For videos viewed during class time, Kim provided students with a written record of the title, call number, and campus library through which they may view the video again. In doing so, she applied UDI principle 3, Simple and Intuitive Use. Similarly, she reported eliminating complexity by conveying course goals, expectations, and objectives in the course syllabus.

Pedagogical strategies. The majority of UDI strategies reported by Kim were pedagogical in nature. She reported using different kinds of media (i.e., videos, photos, cartoon illustrations, poems, text) as a means to engage students in critical reflection and analysis of course content. Students analyzed these artifacts during lectures, discussions, and exams. For example, to prompt students to “think critically visually, as opposed to simply only in text” she asked students to analyze photographs and cartoon illustrations. She also utilized both audio and textual pathways to engage students’ analysis of social phenomena. During class time, students analyzed music samples and poems read aloud. For example, she recounted that students listened to music clips while

viewing the lyrics via the overhead projector: “I had them listen to it twice. One was to have them focus on how she’s saying it . . . and also listen to how she sang it, as a way to help them analyze the text in light of the readings.” She also provided opportunities for class discussion, as a means for “students to think better orally through dialogue and engagement.” These examples demonstrate the application of UDI Principle 2, Flexibility in Use. By creating varied learning opportunities, she offered students opportunities to learn and demonstrate their understandings in ways aligned with their diverse strengths.

Kim also articulated UDI principles when describing her class participation requirement. To encourage student participation, she invited students to share their thinking in whole class, in small groups, and in student pairs. By promoting peer collaboration and sharing, she applied UDI principle 8, Community of Learners. In addition to spontaneous participation in class discussions, Kim allowed students to prepare reflections in advance, to share during class discussions. This class participation option anticipates individual differences in the ability to spontaneously formulate or express ideas aloud. “So they kind of need some time to kind of digest, so I give them this option . . . and this is also very good for foreign students.” These practices demonstrate Tolerance for Error (principle 5) by planning for individual differences in students’ rates of thinking and verbal expression.

Overall Kim’s UDI practice is highly sophisticated, and demonstrates significant forethought. In describing her UDI practices, Kim explicitly verbalized the kinds of student thinking and learning she sought to elicit through her curriculum. In addition, her rationales for implementing UDI practices attended to ways in which UDI principles enhance student thinking and learning, and anticipate individual differences in learning, cognition, and executive functioning. Still, unanticipated access barriers did arise. For instance, during lab sections taught by teaching assistants, Kim was unsure of how to promote equitable participation opportunities without breaking confidentiality: “I wasn’t really sure about how to go about having them write down their analysis along with the other students without singling them out . . . I could have asked the students with the learning disabilities to come to me and tell me orally, but then I would have not been able to maintain their confidentiality because . . . I would have had to tell the lab leaders what the student had said.” She also described

an instance in which a SWD needed more time on an exam, but did not wish to take the exam in segregated setting. Wanting to maintain the student's confidentiality, Kim sought to find a solution. She announced to the few remaining test-takers that "students would get one point deduction for every minute they go over the exam time" then addressed the SWD's accommodation privately: "and when he came up I told him he didn't have the point deduction because of his disability."

Ron

Background. Ron is a health sciences faculty at the four-year university. He reported several experiences providing instruction to diverse learners, including SWD. At registration for the PD, he rated his familiarity with SWD's accommodation needs as "good." He "somewhat agreed" that he holds professional skills needed to make his courses accessible to all students, and described himself as "somewhat comfortable" in addressing the needs of SWD's and diverse learners. Ron's self-reported motivation to participate in the PD included interest in the PD content and in specific disability populations. He reported that he did not currently apply universal design principles to course design, but he did express a keen interest in, and commitment to the needs of individuals with disabilities.

Following the PD, Ron "mostly agreed" that he holds the professional skills needed to make his courses accessible to all students, and he continued to describe his familiarity with SWD's accommodation needs as "good." Ron expressed his intent to adopt 51% to 75% of the PD strategies in his classroom practice.

Plans to apply UDI. When asked about his plans to apply UDI in his classroom, Ron indicated his desire to share information about the university's disabilities studies certificate program with his graduate students, "making students aware of the program itself."

Access strategies. Ron reported applying UDI strategies to support students' access to curriculum materials. He reported creating and providing electronic copies of tables and charts displayed in class. In providing tables and charts in electronic format, he sought to apply UDI Principle 1, Equitable Use: all students may access materials, irrespective of hearing ability, note-taking ability, or ability to maintain sustained attention (Scott et al., 2003). Ron's rationale for using electronic format invoked UDI Principle 6, Low Physical Effort. He sought to minimize non-es-

sential effort, allowing greater student focus on learning: "I send that to them electronically, because frequently...they spend a lot of time writing the whole thing down. And I would rather them get the conceptual aspects of the figure or the table."

Pedagogical strategies. Ron also views UDI as a pedagogical approach to promote universal access to curriculum and instruction. For Ron, creating an inclusive learning environment involves "a change in the way [instruction] is done." In his experience, adopting UDI did not require radical change: "it's just more along the lines of just modifying what I've been doing thus far." Ron highlighted the value of UDI as a pedagogical approach to improve student learning and intellectual engagement: "Students don't respond well to just lecturing...you got to involve them more...and adapting your teaching this way is definitely a method to do it." Towards this aim he reported including classroom activities and modules that prompt students to "take the learning and actually apply it with real information." He also reported frequent use of figures and images in his PowerPoint presentations, and strategically selecting images that "help describe or provide a better description of whatever concept we're discussing." In these examples, he consciously varied his instruction to promote diverse means of learning and experiencing knowledge – a practice consistent with UDI Principle 2, Flexibility in Use.

Although Ron reported applying a small number of UDI strategies, overall Ron perceives UDI as "something good" that he will continue to use. He also actively pursued growth in his UDI practice, by including UDI as a domain to evaluate his performance through end of semester course evaluations: "I specifically ask in the evaluations things related to how the material are presented, use of assistive technology." By actively seeking out an external means to evaluate his UDI performance, Ron demonstrates personal agency and motivation to achieve his goal of inclusive instructional practice.

Joseph

Background. Joseph is a fairly new science faculty at the four-year university. Prior to the PD, he attended a half-day workshop pertaining to SWD. Yet, he reported few experiences providing instruction to diverse learners, including SWD. At registration for the PD, Joseph rated his familiarity with SWD's accommodation needs as "good." He "mostly agreed" that he holds professional skills to make his courses

accessible to all students, and described himself as “very comfortable” in addressing the needs of SWD’s and diverse learners. Joseph’s self-reported motivation to participate in the PD included interest in learning new instructional methods to help students with learning or physical disabilities. Joseph reported that he currently applied universal design principles to course design.

Following the PD, Joseph “mostly agreed” that he holds the professional skills to make his courses accessible to all students, he rated his familiarity with SWD’s accommodation needs as “good,” and he reported he was “somewhat comfortable” in addressing the needs of SWD’s and diverse learners. He expressed intent to adopt more than 75% of the PD strategies in his classroom practice.

Plans to apply UDI. In describing his plans to apply UDI during the semester, Joseph listed UDI strategies that promote student access to the curriculum. These strategies included providing a welcoming disability access statement in his course syllabus, providing advance electronic copies of handouts, and speaking audibly and clearly.

Access strategies. Joseph applied UDI principles to augment the accessibility of course content, using strategies he found “suitable for [his] class.” He sought to create a Welcoming Climate (UDI Principle 9), through inclusion of a disability access statement in his course syllabus. He also applied UDI Principle 1, Equitable Use, to maximize student access to his course materials. For instance, Joseph expressed a conscious effort to speak loudly, slowly, and clearly: “I try to speak loud, to speak slow...repeat things many, many times...for this class I have a very small lecture hall...but if needed, I would use the microphone.” He reported use of large fonts in his PowerPoint presentations, and email distribution of electronic handouts that summarize the content to be covered during class: “I send it in PDF format, and you can...you know make it much larger or smaller.” His rationale for distributing advance, electronic course materials invoked the UDI principles of Low Physical Effort (Principle 6) and Tolerance for Error (Principle 5): “And that is not only for them to be able to pay more attention in class and write less, but also for people that might have problems taking their time to understand what is written...to get the concepts.” Principle 6 seeks to minimize physical and cognitive effort so students can attend to instruction, while Principle 5 plans for individual differences in “student learning pace and prerequisite skills” (Scott et al., 2003).

Pedagogical strategies. Joseph applied several UDI pedagogical strategies during the semester, and informally surveyed students regarding their learning preferences. For instance, he reported use of, and student preference for, guided notes. Guided notes are handouts that guide students through a lecture by deleting key facts, concepts and relationships from a lecture outline. A UDI strategy presented during the PD, guided notes aim to reduce the physical and cognitive demands of note-taking. Joseph’s rationale for using guided notes is aligned with UDI Principle 6, Low Physical Effort: “I had removed some words of important terms so they would write something, and that would keep their attention.”

Joseph also reported embedding thought questions within his PowerPoint presentations in order to engaged students’ thinking about course content. He combined these thought questions with a class response system (e.g., clickers) to assess student understanding. By incorporating these thought questions and classroom response system, Joseph created opportunities to identify and address student misconceptions and gaps in understanding. This practice is consistent with UDI Principle 5, Tolerance for Error, in that he planned for individual differences in learning pace and skill, and created opportunities for frequent formative feedback (Scott et al., 2003). Outside of class, Joseph offered online assignments that prompt students to apply their learning, and self-assess their understanding. For instance, his students could apply their learning through graded online assignments. He explained that these graded online assignments benefit students who have difficulty demonstrating content mastery through the closed book, timed tests, including SWD: “[T]o be able to do homework at home with the notes, with the books...then they have all the time in the world to do one assignment.” Joseph’s rationale for the online graded assignments is consistent with UDI Principles 2 (Flexibility in Use) and 5 (Tolerance for Error) in that graded online assignments offer variation in the methods of student assessment, and anticipate variation in student learning pace. At the end of each unit, Joseph also offered optional, ungraded online practice questions “just for refreshing the material.” Such practice questions create opportunities for student self-assessment. He reported that his students appreciate these opportunities for practice and that students inquired “what else can I do to learn more and to fix more of the material in my head.”

Overall, Joseph conceptualizes UDI as an approach which does not require extensive changes to curriculum and instruction: “[Y]ou know, it’s a slight modification of what you usually do, right?” He also views UDI as a design approach which ultimately benefits all students: “So [UDI] is things that you can think of, designed only for people with learning disabilities or physical disabilities, but at the end, help everybody pretty much.” Joseph reported that he did not encounter challenges when implementing UDI in his undergraduate classes, and expressed satisfaction with his level of implementation: “I have a pretty good idea of pretty much everything...and there’s nothing that I would’ve done and I didn’t, because I didn’t know how to do it.” He also vocalized willingness to respond to student needs, “I’m very open to anything that a student might need.” For instance, during the pre-interview he expressed commitment to equitable access for students with vision- or hearing-related accommodation needs: “If you want me to use the microphone I will use it. If you want me to, um I don’t know, make my font type larger I will do it.” However, it does seem that for Joseph, student responsiveness has limits. For instance, during post-interview he reported that a large number of students fared poorly on the first two exams, and that such students requested additional graded assignments so they could “pick up” their grades. Joseph expressed unwillingness to provide this concession, emphasizing the importance of self-regulation: “And I would say, ‘I’m not going to do that, you are adults and you should study for yourself.’ So I think a big problem is that the students, at least at this level, you know, they are not used to being responsible of their own efforts.” Joseph’s strong sentiment is aligned with UDI principle 9 (Instructional Climate), in that he holds high academic expectations for all students. However, UDI also seeks to optimize all students’ abilities to meet high academic standards through the application of UDI principles and inclusive instructional practices.

Anita

Background. Anita is an experienced full time faculty at the four-year university in a social science discipline. At registration for the PD, she described herself as “somewhat comfortable” in addressing the needs of SWD’s and diverse learners, and rated her familiarity with SWD’s accommodation needs as “good.” She “mostly agreed” that she holds professional skills to make her courses accessible to all students. Her moti-

vation to participate in the PD was to obtain the latest information on SWD in higher education.

Following the PD, Anita described her familiarity with SWD’s accommodation needs as excellent, she “definitely” agreed that she holds the professional skills to make her courses accessible to all students, and she reported she was “somewhat comfortable” in addressing the needs of SWD’s and diverse learners. Anita expressed her intent to adopt more than 75% of the PD strategies into her instructional practice.

Plans to apply UDI. Anita reported that the PD offered her a first experience with UDI: “I’ve been to lots of workshops about better teaching, but I have not heard [of] universal design...So that concept was very interesting to me...it was brand new.” She also shared that the concept of UDI is aligned with her beliefs about quality teaching: “I do believe that I should teach all students, as if, well as individuals. So, whether or not identified as diverse or disabled, I believe [I] should teach better.” Anita viewed participation in the follow up study as an opportunity to extend her learning: “[T]here’s so much in this notebook, and in the institute. I want a chance to try to apply what I’ve learned and to participate, and if I participated in the study that would give me a little more push to, you know, be aware and apply.” Anita’s plans to apply UDI included specific access and pedagogical strategies covered in the PD.

Access strategies. During the semester following the PD, Anita reported applying UDI strategies to support students’ access to curriculum materials and course content. She reported that, as a result of the PD, she became more aware of access issues affecting students with visual, auditory, or learning differences: “I’ve become more aware of large print, and the necessity for reading what’s already shown.” Using large print and reading lecture slides aloud are access strategies, covered during the PD, that apply the UDI principles of Equitable Use (Principle 1) and Perceptible Information (Principle 4). She reported that prior to the PD, she had not considered reading her lecture slides aloud: “I used to think that, um, if I showed it to you, you could read it and why should I repeat...I thought it was sort of redundant.” Yet, use of UDI access strategies became more salient as a result of student feedback during the follow up semester. For instance, one student asked, “would you please read what’s up there? Because I can’t see what’s up there.” Anita reported thinking “oh yes, I learned that” following this student’s request. She also reported great-

er interest and attention to student needs: “I’m trying to listen more carefully when students make requests ...trying to be more careful about what I’m hearing from the students in terms of instructional materials.” For instance, Anita also reported noticing that one student had glossed through requirements for a course assignment, thereby losing points. Rather than viewing this oversight as a student shortcoming, she interpreted this student’s experience through the lens of UDI. In response, she began announcing course deadlines and assignments “in more than one way and more than one place.” Presenting information about course requirements in more than one location (e.g., in class announcements, on the course website) is an application of UDI Principle 3, Simple and Intuitive Use. Simple and Intuitive communication of course requirements take into account individual differences in experience, language skills, attention, and executive functioning (UDI Online Project, 2009). Overall, Anita reported greater awareness of access issues and strategies during the semester following the PD: “I’m just being more aware of, you know, the size of the information, the organization of the information, reading it out loud and reading it audibly, not turning to the blackboard when I’m reading.” However, not all of Anita’s UDI plans were actualized. For instance, although she wanted to locate open source videos that included closed captioning, her search efforts were met with limited success. She was though, pleased to locate a textbook for purchase that includes closed captioning of online video content.

Pedagogical strategies. Anita shared that in her teaching experience, identified students with disabilities rarely make requests for accommodations. Anita reported the goal of creating a welcoming climate for diverse learners (UDI Principle 9). Towards this aim, she reported being “more active in notifying all students that they could inquire and ask and get services.” In addition, Anita sought to create a more welcoming and inclusive climate by disclosing her own accommodation needs: “I disclosed to my students that I have a hearing issue and a sight issue. And I’ve never done that before. But I got a lot of encouragement from the workshop...that [it] might be helpful.”

Anita also reported creating graphic organizers, by following a template presented in the PD: “I used the graphic organizer three times. That was one of the recommended ways to make material more available.” Anita’s rationale for using graphic organizers invoked UDI Principle 2, Flexibility in Use: “[T]he

idea of trying to illustrate what needed to be done in more than one way was quite, was fascinating to me.” UDI Principle 2 holds that flexibility and choice in methods of use is a way to anticipate and respond to diversity in students’ abilities. Anita also planned for diverse learners by making course content available using multimedia (e.g., videos). She anticipated that students would be self-directed, and make use of those resources best aligned with their learning preferences: “So I try to vary it up, but I expect the students to take charge and use the variety of ways.” She also applied UDI Principle 2 by varying the means by which students synthesize knowledge and demonstrate understanding: “One assignment is a real technical ten-page paper, another one is a very creative one-page vignette of a person, written in poetry or prose... in any language.” In doing so, Anita’s students are able to capitalize on their strengths (e.g., expository or narrative writing), while gaining practice in both genres. Anita also provided choice in how classroom assessments would be weighted: “They can take the quizzes and no midterm, the quizzes and no final or they can take both and get the better of the two grades. So I built in choices, so I think the student has more control.” Providing student choice in how classroom assessments will be weighted is an application of UDI Principle 5, Tolerance for Error. Tolerance for Error involves planning for individual differences in experience, academic preparation, and pace of learning (UDI Online, 2009). Flexibly weighting students’ classroom assessments appears aligned with Anita’s own beliefs about student assessment: “I don’t consider the quizzes as life and death...cause I just think that [a quiz] is not a great way to learn, but it is a good way to insist on reviewing the materials.” She also demonstrated Tolerance for Error (UDI Principle 5) by including optional service learning opportunities as a means to earn extra credit: “I offered extra credit to three sections of one class to work with [the] Center on Disability Studies, and one student actually did.” Anita’s motivation was not limited to the goal of creating multiple pathways to student success. Her stated rationale was to promote the concept of inclusion: “everybody should...try to be aware of being more open and inclusive.”

Although Anita demonstrated a high level of UDI implementation, she nonetheless described her professional skills to facilitate curriculum access as an area of potential growth: “In terms of instructional materials, I am a little bit more aware of the appro-

priateness of the materials, but I've got a long way to go." She appears to conceptualize universal design as a dynamic, ongoing process, rather than a static state of UDI achievement. Overall, Anita conceptualized UDI principles and strategies as a means to advance her current level of professional skills: "[I]n general, what I'm doing is extending my teaching methods based on what I learned." She also evidenced critical reflection on the relative success of her efforts to adopt UDI strategies during the semester following the PD. Regarding the extent to which she achieved her plans to apply UDI, she replied, "How well did I achieve my plan? I'd say, okay...only, cause I'd like to do better." She views the integration of UDI principles and strategies as an ongoing endeavor that cannot be achieved in a single semester: "you know there's always room for improvement... I think that universal design is still pretty much a mystery to me." Still she envisioned an upper limit on the amount of effort she is willing to dedicate to Universal Design: "[I]f I'm going to pursue the universal design and stay curious about it...it will have at least a two year history with me. After that I would have to have a reason to continue."

Result 2: Cross Case Analysis

Differences in Levels of UDI Implementation

Taken together, the four faculty applied eight of the nine UDI principles during the semester following the UDI-focused PD. Based on faculty self-report, the most commonly applied UDI principles included Flexibility in Use, Simple and Intuitive Use, and Tolerance for Error (i.e., Principles 2, 3, and 5). Less frequently applied were Equitable Use, Perceptible Information, Low Physical Effort, Community of Learners, and Welcoming Climate (i.e., Principles 1, 4, 6, 8, and 9). Of the four faculty, none reported applying UDI principle 7, Size and Space for Approach and Use. The degree of UDI implementation differs across the four faculty. Each of the faculty reported adopting UDI strategies presented during the PD (e.g., use of the pause procedure, guided notes, and electronic handouts). However, please note the study did not objectively examine whether these access strategies effectively increased equitable access (e.g., we did not verify whether faculty's electronic handouts were compatible with screen readers). Each faculty also reported applying UDI principles in at least one novel way. For instance, Anita assigned both expos-

itory and creative writing compositions to capitalize on student strengths (UDI principle 2, Flexibility in Use). However, Kim's approach to UDI implementation stands out as qualitatively different from the other three faculty cases, in that her UDI practice was exceptionally innovative and well-integrated. Kim applied UDI principles across the domains of curriculum, instruction, and student assessment, and she layered multiple UDI strategies within a single classroom activity. For instance, Kim presented music lyrics and poems both visually and aurally, utilized these artistic media as a vehicle through which students engaged with concepts presented in the course readings, and asked students to discuss the media orally. Thus, it can be said that faculty's level of implementation ranged from adopting UDI strategies presented during the PD, to innovating instruction based upon UDI principles.

Reasons for Different Levels of UDI Implementation

Through cross-case analysis, three interrelated themes emerged as potential factors, which may explain qualitative differences in faculty's level of UDI implementation. These themes include: (a) UDI conceptualization, (b) faculty self-reflection, and (c) internalization of a social model of disability.

UDI conceptualization. UDI principles provide a lens through which faculty design or redesign their instruction. Mcguire, Scott, and Shaw (2006) describe UDI as "a framework to guide faculty in reflective practice, rather than as a rigid procedure or prescription for instruction" (p. 169). Thus, UDI can be understood as a framework that guides ongoing curriculum development and improvement. Findings from the cross case analysis suggest differences in the extent to which faculty conceptualize the UDI as an ongoing endeavor. For instance, Joseph expressed satisfaction with his level of UDI implementation and seems to conceptualize UDI as a finite, achievable state: "I have a pretty good idea of pretty much everything...there's nothing that I would've done and I didn't, because I didn't know how to do it." In contrast, Anita viewed the integration of UDI principles and strategies as an ongoing endeavor: "you know there's always room for improvement", while Ron included UDI as a domain to evaluate his performance in end of semester course evaluations, suggesting pursuit of growth in his UDI practice.

Faculty self-reflection. Within the UDI framework, reflective practice is a vehicle through which

instructional improvement is actualized. Faculty reflection was evidenced by each of the four faculty to some degree. For instance, during the post interview Anita reported a goal of “listen[ing] more carefully when students make requests.” Although faculty evidenced self-reflection, their reflections did not always lead to faculty to identify opportunities to apply UDI. At times, their reflections revealed missed opportunities to apply UDI principles. For instance, Kim reflected on how well she was able to differentiate an in-class writing assessment without breaching confidentiality. Kim reported: “I wasn’t really sure about how to go about having them write down their analysis along with the other students without singling them out.” Although Kim considered different options to facilitate equitable participation, she did not apply a UDI strategy in this case. One UDI approach may have been to provide all students an opportunity to revise their drafts as a take home assignment. Kim also described an instance in which a SWD needed more time, yet did not wish to take an exam in segregated setting. To maintain the student’s confidentiality, Kim announced that “students would get one point deduction for every minute they go over the exam time.” Then, she addressed the SWD’s accommodation privately: “and when he came up I told him he didn’t have the point deduction because of his disability.” An alternative approach to maintain student confidentiality may have been to privately inform the student in advance (i.e., explain that SWDs would not be penalized for extended time) or to apply UDI Principle 5 (Tolerance for Error) by removing the extended time penalty for all students.

Joseph also reflected on his instructional decision-making, without identifying a missed opportunity to apply UDI principles. He reported that many of his students fared poorly on the first two exams, and that these students requested additional graded assignments so they could “pick up” their grades. Although he seemed to acknowledge that students might exit high school ill-prepared for the demands of college, Joseph expressed unwillingness to provide the additional graded assignments. One may view this scenario as a missed opportunity to apply UDI principles 2 (Flexibility in Use) and 5 (Tolerance for Error). Applications of these UDI principles could include assigning less “weight” to the first exam, providing students an opportunity to retake a parallel form of the exam (then average the two exam scores), and/or providing additional or optional assignments that

measure mastery of the same course content, using different means.

Internalization of a social model of disability. Implicit within the UDI framework is a social model of disability, which holds that disability is a social construct arising as a result of disabling environments (i.e., environments that are not fully usable by, or inclusive of all potential users) (Block et al., 2006). Thus, educational environments can be disabling for students with documented disabilities as well as for diverse learners without documented disabilities. A social model of disability is different from a medical model of disability. Individuals who internalize a medical model of disability typically identify the individual as the source of the disabling condition (rather than the existence of a disabling environment). In contrast, individuals who internalize a social model of disability perceive a social responsibility on the part of those “with power to affect change in that environment, and not the person with a disability” (Block et al., 2006, p. 117). Therefore, the extent to which faculty internalize a social model of disability may be a factor influencing UDI implementation.

In discussing their UDI practice, all four faculty respondents occasionally used language characteristic of medical model thinking (e.g., helping SWD, abilities, SWD’s needs). However, results from the cross case analysis also suggest differences in the extent to which the four faculty internalized a social model of disability. For instance, Kim anticipated that some students take more time to formulate their ideas. Rather than view this as an individual shortcoming, Kim included a class participation option anticipating individual differences in the ability to spontaneously formulate or express ideas aloud. She allowed students the option of preparing reflections in advance, and then sharing these reflections during in-class discussions: “So they kind of need some time to kind of digest, so I give them this option.” Similarly, Anita’s responses in post-interview suggest internalization of a social model of disability. For instance, when she observed that one student had glossed through requirements for a course assignment leading to lost points, she did not fault the student for haste or carelessness. Rather, she sought to change the classroom environment to make sure course requirements were conveyed in a simple and intuitive manner: she began announcing course deadlines and assignments “in more than one way and more than one place.” In contrast, Joseph elected not to apply UDI principles, after

observing that a large number of students performed poorly on the first two exams. Although Joseph recognized that some first year students are ill-prepared for the demands of college (“[students] are not used to be responsible of their own efforts”), he was unwilling to grant students’ requests for additional assignments so they could “pick up” their grades. He reported: “And I would say, I’m not going to do that, you are adults and you should study for yourself.” In Joseph’s view, the locus of the problem was found within the student; he did not perceive a social responsibility to plan for individual differences in study skills or college readiness.

Summary

The purpose of the follow up study was to investigate the ways in which faculty applied UDI principles and strategies during the semester following the PD (i.e., individual case studies), and to detect patterns, then identify themes that might explain variation in UDI implementation across faculty (i.e., cross case analysis). The individual case studies showed the rich and dynamic nature of faculty learning as they applied UDI principles during the fall semester. The cross case analysis found qualitative differences in UDI implementation. Faculty’s level of implementation ranged from adopting UDI strategies presented during the PD, to innovating instruction based upon UDI principles. Three interrelated themes emerged as potential factors influencing faculty’s level of UDI implementation. These themes include the extent to which faculty: (a) conceptualize UDI as an ongoing endeavor (versus a finite, achievable state), (b) engage in self-reflection, and (c) internalize a social model of disability.

Implications

Although it should be noted that the themes cannot explain all variation in faculty UDI implementation, findings from the individual case studies, and emergent themes from the cross case analysis reveal important implications for research and practice. First, UDI can be understood as a framework that guides ongoing curriculum development and improvement. Findings from the present study revealed differences in the extent to which the faculty conceptualize UDI as an ongoing endeavor (versus a finite, achievable state). When planning future UDI focused PD, the

concept of ongoing instructional improvement is important to emphasize. One approach that may support faculty progress toward comprehensive instructional innovation is to identify short and long term UDI goals, with support from a PD facilitator or mentor. Faculty goals for ongoing instructional improvement can focus on inclusive pedagogical practices (e.g., including alternative assessment options) or can be grounded in concrete access strategies (e.g., learning how to use filters to find closed-captioned videos in libraries or on YouTube).

In addition, within the UDI framework, reflective practice is understood as a primary vehicle through which instructional improvement is actualized. Findings from the present study support this view. Faculty reflection on UDI practice and students’ experiences was evidenced by each of the four faculty to some, albeit varying, degree. Nonetheless, faculty reflection revealed missed opportunities to apply UDI principles. Thus, faculty may benefit from a UDI-focused PD that is dynamic, ongoing, and embedded within their day to day professional experiences and social interactions (Desimone, 2009). To promote faculty reflection, ongoing PD activities might include mentoring, coaching, lesson study, peer observations, and virtual coaching (Croft, Cogshall, Dolan, & Powers, 2010).

Findings from the present study also suggest that internalization of the social model of disability may be a factor influencing UDI implementation. This finding is consistent with theory (see Block et al., 2006). Investigating whether internalization of the social model of disability is related to the quality of UDI implementation may be an important area for a further study. For instance, internalization of the social model of disability may be a construct of interest within surveys that assess faculty attitudes towards, or willingness to apply UDI. In addition, although participating faculty gained exposure to the social and medical models of disability during the multiculturalism and disability module of the UDI focused PD, more explicit connections between the social model of disability and UDI implementation may be warranted. During the faculty interviews, all four faculty respondents occasionally used language characteristic of medical model thinking (e.g., helping SWD, abilities, SWD’s needs). However, this finding may reflect the presence of these terms in the wording of our faculty survey instrument, the UDI principles themselves, and the UD literature. Greater attention to perpetuating a counter-narrative to the

“needs” and “abilities” discourse may be an important feature of future UDI-focused PD. For instance, a future UDI-focused PD might ask faculty to analyze vignettes that illuminate the relationships among language, medical model versus social model thinking, and instructional decision-making. Faculty pre- and post-survey items can also be designed to reflect this discursive focus, by focusing on inclusive instruction, knowledge of access barriers faced by SWD, and gaining professional skills for removing barriers to full participation.

Limitations

Of the 16 faculty who participated in the PD, seven volunteered to participate in both the PD and the follow-up study. Of these seven faculty participants, four cases were purposefully selected for information richness. The cases were qualitatively analyzed to generate in-depth understandings of phenomena. However, findings from this small sample of faculty are not empirically generalizable to the general postsecondary faculty population (Patton, 2015); the general university population may include faculty who are less motivated to learn about UDI, accessibility, and disability issues. In addition, the faculty participants in the follow-up study were aware that they would be interviewed at the end of the semester. The act of participating in the follow-up study may have increased faculty motivation to apply UDI, and therefore influenced instructional behavior. Thus, findings from the present study are not generalizable to faculty who are not actively engaged in performance evaluation or progress monitoring activities. In addition, it is important to note that the faculty pre- and post-surveys used in this study mirrored the “individual needs” language found in the UDI and UDL literature at the time the study was conducted. The use of this language in faculty pre- and post-survey may have normalized faculty use of the terms “needs” and “abilities” during faculty interviews. For future research, the authors will revise our faculty survey questions in order to focus attention on the presence of learning and access “barriers”, rather than the presence of students learning and access “needs.”

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Table 1

Characteristics of the Case Study Participants

Participant	Gender	Discipline	Knowledge of UDI Before the PD	Experience in Meeting SWD's Needs Before the PD	Change in Comfort in Meeting SWD's Needs After the PD	Change in Familiarity with Accommodations After the PD	Change in Professional Skills in Instructing SWD After the PD
Kim	F	Social Science	N	Few	+ Very Comfortable	- Excellent	0 Mostly Agree
Ron	M	Health Science	N	Many	- -	0 Good	+ Mostly Agree
Joseph	M	Natural Science	Y	Few	- Somewhat Comfortable	0 Good	0 Mostly Agree
Anita	F	Social Science	N	Many	0 Somewhat Comfortable	+ Excellent	+ Definitely Agree

Note. The criteria used to categorize the faculty by their previous experience with SWD are (1) the number of SWD one has worked with and (2) the number of accommodations one has provided to SWD. Change in comfort, familiarity with accommodations, and professional skills were assessed by comparing participants' pre-post survey responses, in which participants self-rated their levels using a four-point scale. "+" indicates increase after the PD; "0," no change after the PD; and "-", decrease after the PD. Faculty post-PD levels of comfort, familiarity, and professional skills are reported.

Appendix

Description of PD Content Areas

(a) Universal Design for Instruction. The UDI curriculum highlighted the guiding principles of UDI (Scott, McGuire, & Shaw, 2001) and shared UDI strategies. To facilitate participants' future use of UDI, the curriculum included links to UDI resources and examples of graphic organizers and guided notes that can be easily adapted for novel contexts. The UDI focal area concluded with a cautionary reminder that UDI does not replace or diminish SWD's legal entitlement to reasonable accommodations.

(b) Accessible Distance Education and Assistive Technology. This module introduced case studies of four students with disabilities participating in online courses. Through an exploration of these case studies, the module highlighted laws specific to online course offerings and explored high- and low- tech solutions enabling equitable online communications and access. At the close of the presentation, participants discussed the relevance of accessible distance education in their own educational practice.

(c) Student and Faculty Rights and Responsibilities. This module reviewed disability rights laws relevant to higher education and situated the provision of reasonable accommodations within federal mandates for equal opportunities for SWD participation in higher education.

(d) Disability Culture. This module utilized poetry and powerful vignettes to engage participants' reflection on individuals with disabilities' shared history of oppression and resilience. The curriculum honored the experience of disability as a part of individuals' identities and provided an alternative model through which participants might understand student and faculty rights and responsibilities in higher education.

(e) Hidden Disabilities. Participants gained insight into the nature, prevalence, and manifestations of the most common hidden disabilities among adolescent and adult populations (i.e., LD, ADHD, psychiatric disorders). The curriculum directly addressed myths and prejudicial attitudes towards highly stigmatized hidden disabilities (e.g. psychiatric and learning) and prompted participants to consider how prejudicial attitudes effectively undermine the Americans with Disabilities Act. Participants explored educational barriers affecting students with hidden disabilities in tandem with practical solutions and recommended educational supports.

(f) Multiculturalism and Disability. This module began by locating disability within the framework of diversity. The presenter introduced the social model of disability and offered participants an opportunity to reflect on the physical and attitudinal barriers to full participation in higher education.

Accommodations and Support Services for Students with Autism Spectrum Disorder (ASD): A National Survey of Disability Resource Providers

Kirsten R. Brown¹

Abstract

Students with Autism Spectrum Disorder (ASD) are participating in postsecondary education at an increasing rate. Yet, we know little about what types of accommodations or services disability resource providers employ to support students with ASD. The purpose of this study was to examine how postsecondary institutions are fostering the academic success of students with ASD. Using a randomly selected, nationally representative sample of postsecondary institutions (n = 1,245 response rate 38.8%; return rate 41.9%), this study explored enrollment trends of students with ASD and the types of reasonable accommodations and support services offered to those students. This study used predictive modeling to isolate factors that are strong indicators of whether or not an institution provided ASD-specific programs. Findings indicate that although students with ASD are more likely to attend two-year public institutions, there are no differences in accommodations or student support services by institution type. Over 90% of institutions used academically focused accommodations (e.g., extended exam time), but only 44.7% of institutions provided sensory accommodations and 28.3% of institutions offered ASD-specific services. The existence of peer mentoring programs was the strongest predictor of whether or not an institution had ASD-specific services. Implications for practitioners working in postsecondary environments and future research are discussed.

Keywords: Autism, ASD, college, accommodations, support services

One in 10 college students reported having a disability (U.S. Government Accountability Office, 2009). As members of this population, students with autism spectrum disorder (ASD) are increasingly participating in higher education (Geller & Greenberg, 2010). The United States Department of Education indicated that from 2008 to 2009, approximately 78% of four-year public institutions and 70% of two-year public institutions enrolled students with ASD (Raue & Lewis, 2011). A 2010 survey of Association of Higher Education And Disability (AHEAD) members, found that disability resource offices at four-year doctoral granting and two-year public institutions served an average of 8.8 students with ASD (Kasnitz, 2011). It is likely that these findings underreport the total number of students with ASD, as research shows a 50% decrease between students identified as having a disability in high school and those who self-disclose in college (Newman, Wagner, Cameto, & Knokey,

2009). It is also probable that the number of students with ASD in postsecondary education will increase, as the current rate of childhood diagnosis is one in 68 individuals (Centers for Disease Control and Prevention, 2014).

Students with ASD must negotiate ableism in their pursuit of higher education and some of the barriers they face may occur within the campus environment (Brown, Peña, & Rankin, 2015). Although the retention and persistence rates for students with ASD are not known, the broader literature on students with disabilities demonstrates that several institutional factors are related to academic success including social engagement (Mamiseishvili & Koch, 2011), positive faculty attitudes (Lombardi & Murray, 2011), and access to appropriate accommodations (Stein, 2013). Accommodations and support services are important predictors of academic success for students with disabilities (Kim & Lee, 2015). Yet, students identified

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accessing accommodations as a major barrier in their transition to postsecondary education (Cawthon & Cole, 2010). Moreover, existing accommodations may be ineffective (Kurth & Mellard, 2006).

Proper accommodations and support services can positively influence the experience, persistence, and success of students with ASD (Van Hees, Moyson, & Roeyers, 2015). Given the substantial variations in how colleges or universities support students with disabilities (Kurth & Mellard, 2006), a focused study of current ASD practices is critical for both researchers and practitioners. Additionally, the connection between research and practice is imperative because ASD-specific policies and programs that are developed on a lack of knowledge or stereotypical, pop-culture assumptions empowers ableism and creates hostile environments. The purpose of this research is twofold: first, using a nationally representative and randomly selected sample of postsecondary institutions, this research describes differences in reasonable accommodations and general support services for students with ASD; second, this research explores factors that best predict whether institutions offer ASD-specific support services.

Related Literature

Concepts that informed this research include legal precedent, reasonable accommodations as a method of supporting academic success for students with disabilities, and the intersection between functional limitations and the campus environment for students with ASD. This section concludes by summarizing the limited information on accommodations and support services for students with ASD in postsecondary education.

Legal Framework

Legislation and case law structure policies and practices that affect the experiences of students with disabilities in postsecondary education. Although several legal concepts informed this research, this review focuses on reasonable accommodation, academic standards, and personal services. After a student meets the definition of a person with a disability under the Americans with Disabilities Act Amendments Act (ADAAA) (P.L. 110-325) and properly notifies their institution, the accommodation process starts. Accommodation is defined by the Americans with Disabilities Act of 1990 (ADA) (P.L. 101-336) as, “any change in the work or school environment or in

the way things are customarily done that enables an individual with a disability to enjoy equal opportunities” (42 U.S.C. sec 121001). Legislation is interpreted via case law (e.g., *Southeastern University Community College v. Davis, 1979*) and the courts coined the term “reasonable accommodation” to negotiate a balance between providing access and modifications that substantively devalue academic standards (Kaplin & Lee, 2013).

Students also have responsibilities when requesting reasonable accommodations. Individuals with ASD must meet the definition of a person with a disability by being “otherwise qualified,” for the purposes of performing the essential functions or duties of the position (*Jakubowski v. The Christ Hospital, 2010*). There are no legal protections for students with disabilities who are dismissed for misconduct (Kaplin & Lee, 2013), including threats to physically harm others (*Mershon v. St. Louis University, 2006*) or cheating on exams (*Strahl v. Purdue University, 2009*). Hence, violations of conduct codes are not reasonable (Simon, 2011).

The ADAAA differentiates between reasonable accommodations and personal services. Under the Individuals with Disabilities Act (IDEA) (P.L. 105-17), students with ASD in K-12 education may receive personal services, such as an organizational coach or social role playing. However, when students enter the postsecondary environment, they shift from a framework of entitlement (IDEA) to a framework of equal access and protection from discrimination (ADAAA) (Wolf, Brown, & Bork, 2009). The change in legislative landscape means that students with ASD may face a significant reduction in support when they enter college (Wolf et al., 2009) because the ADA does not mandate personal services (Simon, 2011).

Reasonable Accommodations and Academic Success

The National Center for Education Statistics (NCES) tracks trends in the types of support services and accommodations provided to students with disabilities. A substantive number of institutions provide academically focused accommodations, such as “classroom note takers (77%), faculty-provided written course notes or assignments (72%), help with learning strategies or study skills (72%), alternative exam formats (71%), and adaptive equipment and technology (70%)” (Raue & Lewis, 2011, p. 3). However, NCES does not provide data on campus life accommodations such as residence hall modifications.

Students with disabilities who use accommoda-

tions have greater rates of academic success than those who do not access accommodations (Denhart, 2008; Kim & Lee, 2015; Mamiseishvili & Koch, 2011). Kim and Lee (2015) found that test and course accommodations, such as extended exam time, were significant predictors of grade point average (GPA). Mamiseishvili and Koch (2011) examined factors that influenced the first- to second-year persistence of students with disabilities and found that, students who used accommodations in the first year were more likely to persist than students who did not use accommodations.

Several factors influence students' access to and use of accommodations. For example, students must self-advocate; however, research indicates that not all students possess this skill (Hong, 2015). The existent literature demonstrates that for students to use accommodations, the student must view the accommodations as both confidential (Stein, 2013) and effective (Marshak, Van Wieren, Ferrell, Swiss, & Dugan, 2010). Unfortunately, Kurth and Mellard (2006) found that students rated accommodations as ineffective between 12.5% and 36.4% of the time. Ineffective accommodations were inconsistently delivered, accommodations that obstructed sense of belonging (e.g., different testing location) (Kurth & Mellard, 2006), or accommodations that violated anonymity (Stein, 2013). Appropriate accommodations are based on the students' functional needs within the learning context rather than the students' disability label (Kurth & Mellard, 2006; Lindstrom, 2007). Research demonstrates that students did not ask for accommodations in every course, instead students used accommodations when they perceived that the accommodation was necessary for success (Stein, 2013).

Institutional barriers and ableism also influence students' use of accommodations (Hong, 2015; Stein, 2013). Students reported that institutional processes such as complex documentation requirements (Bolt, Decker, Lloyd, & Morlock, 2011), disability testing (Denhart, 2008), differences between high school and college (Cawthon & Cole, 2010), and variability in the type or extent of accommodations (Lindstrom, 2007; Madaus, Banerjee, & Hamblet, 2010) hinder use of accommodations. The perceptions of others and associated stigma, are substantive factors in the decision to seek out accommodations (Barnard-Brak, Lechtenberger, & Lan, 2010). Students identified facets of ableism, including the desire to avoid negative social reactions, insufficient knowledge from faculty

or staff, and negative experiences with faculty as barriers (Denhart, 2008; Marshak, et al., 2010).

The perceptions of faculty members are critical in the accommodations process (Kurth & Mellard, 2006; Rao & Gartin, 2003). When faculty members have a positive stance on disability, students show greater willingness to use accommodations (Hartman-Hall & Haaga, 2002). However, existing research demonstrates that faculty members are often unfamiliar with disability support services and accommodations strategies (Bolt, et al., 2011). Research shows that faculty can hold erroneous beliefs, such as students claim to have a disability to avoid working as hard (Beilke & Yssel, 1999) or accommodations lower academic standards (Kurth & Mellard, 2006). Furthermore, how disabled a student appears also influences faculty members' willingness to provide accommodations (Rao & Gartin, 2003). Faculty members' ablest attitudes can translate into discriminatory actions; students reported experiencing barriers in relation to faculty perceptions' of their abilities (Hong, 2015) and unwillingness to make accommodations (Cawthon & Cole, 2010). In a study on faculty perceptions of ASD, Gibbons, Cihak, Mynatt, and Wilhoit (2015) demonstrated that faculty members thought the inclusion of students with intellectual disabilities and autism would disturb the class routine and take more instructor time.

Support Services

Transition programs, mentoring, and career counseling are key support services for students with disabilities (Brown & Broido, 2015). Transition programs assist students and their families with negotiating social, legal, and self-advocacy changes between high school and college (Roberts, 2010; Wolf et al., 2009). Students that engaged with disability services during the transition to college had better academic performance than students that sought support after their first-year (Lightner, Kipps-Vaughan, Schulte, & Trice, 2012) and alumni with disabilities identified the ability to self-advocate as critical to their postsecondary success (Barber, 2012). Nationally, 42.6% of institutions offer orientation or transition programs (Stodden, Whelley, Harding, & Chang, 2001) and these are important resources, as less than 10% of high school students with disabilities reported having college preparation meetings (Cawthon & Cole, 2010).

In their review of the literature on mentoring for students with disabilities Brown, Takahashi, and Rob-

erts (2010) noted there is a paucity of evidence-based research on effective mentoring practices. The limited research indicates that students with disabilities who participate in peer mentoring have a better understanding of skills needed for success (Burgstahler, 2001) and enhance self-efficacy (Zwart & Kallemeyn, 2001). No national data on the prevalence of mentoring programs for students with disabilities or research on the effectiveness of peer mentoring for college students with ASD was located within the literature.

Almost 90% of institutions provided career counseling (Stodden et al., 2001) and 26.0% of institutions provided targeted career or placement services for students with disabilities (Raue & Lewis, 2011). Yet, college graduates with disabilities have significantly lower rates of employment than degree holders without disabilities (U.S. Bureau of Labor Statistics, 2015). Concerns voiced by students with disabilities included being treated fairly, disclosing disability status and discussing job accommodation needs with their employer, presenting themselves positively in job interviews, and knowing how to write resumes (Hennessey, Roessler, Cook, Unger, & Rumrill, 2006). Alumni with disabilities stated internships, mentoring programs, classes related to disability and the employment transition, self-awareness of strengths and limitations, and post-graduation access to career services were critical supports (Madaus, 2006).

Functional Limitations and the Campus Environment

Understanding students' functional limitations is crucial when creating appropriate interventions (Bedrossian & Pennamon, 2007). Common difficulties that college students with ASD face include managing executive function, coping with sensory input, socializing, and understanding nonverbal communication (Hart, Grigal, & Weir, 2010). Due to differences in executive functioning, students with ASD may struggle with navigating change and balancing several simultaneous tasks (VanBergeijk, Klin, & Volkmar, 2008). Transition programs that assist students with negotiating the adjustment to college or services that help students manage the demands of multiple classes may be supportive (Bedrossian & Pennamon, 2007).

Students with ASD may also experience difficulty with socializing, resulting in loneliness and isolation (Madriaga, 2010). A chilly campus climate can compound students' functional limitations; students with ASD reported experiencing hostile behavior

and sexual assault at a significantly greater rate than their peers without disabilities (Brown et al., 2015). Therefore, colleges should consider interventions that target bullying and sexual education or promote co-curricular involvement and interacting with faculty (Wolf et al., 2009).

Students with ASD may process input from the five external-directed senses (vision, hearing, smell, taste, touch) and two internal-directed senses (balance, muscular feedback) differently (Robertson & Ne'eman, 2008). These differences can cause students with ASD to feel overwhelmed in the classroom and college living environment. Problems associated with visual (e.g., type of lighting), auditory (e.g., use of a microphone in a lecture), and tactile (e.g., texture of cafeteria food) sensitivity are common for students with ASD (Boutot & Myles, 2011).

Postsecondary Support Services for Students with ASD

Existing literature demonstrates that practitioners seeking to accommodate students with ASD face several challenges. First, as described above, there is variability in the types and extent of accommodations generally provided to students with disabilities across different institution types (Lindstrom, 2007; Madaus et al., 2010) leading to a lack of benchmarking or standards for comparison. Second, the functional limitations associated with ASD pose unique challenges within the living-learning environment. Hence, reasonable accommodations employed for students with other disabilities, may not be the best fit for students with ASD (Brown & Coomes, 2016). Students with ASD often need support with executive functions tasks and social-emotional relationships (Longtin, 2014), which are "two areas typically unaddressed by accommodations on postsecondary campuses" (Burgstahler & Russo-Gleicher, 2015, p. 200).

Current literature on students with ASD emphasizes the transition into college (e.g., Roberts, 2010), parental experiences (e.g., Peña & Kocur, 2013), pre-college expectations (e.g., Camarena & Sarigiani, 2009), attitudes towards students with ASD (e.g., Gibbons et al., 2015), and the experiences of faculty members (e.g., Gobbo & Shmulsky, 2014). As noted by Dallas, Ramisch, and McGowan (2015) there is a paucity of information regarding accommodations or support services for students with ASD. Furthermore, many of the findings within the existent literature are difficult to generalize because the data are

specific to one institution or collected using non-random sampling techniques. An extensive review of the literature only located one exploratory study (Smith, 2007) with a nominal ($N=5$; 4.9%) response rate that focused on interventions for students with ASD. Research that explored reasonable accommodations or supports for students with ASD, at a national level, was not located in the existent literature.

Methods

This study investigated interventions that postsecondary institutions use to support students with ASD. Three research questions shaped this study: (1) What types of reasonable accommodations, general support services, and ASD-specific support services are institutions offering?, (2) Are there differences in the provision of accommodations and support services by institution type?, and (3) What factors predict if an institution will offer ASD-specific support?

Operational Definitions

The definition of *reasonable accommodation* follows legal parameters and the intent of providing equal access while maintaining academic standards. The term *general support service* refers to free services or programs designed to support students with and without disabilities. These services provide transition, educational, and social support beyond the level of reasonable accommodations; however, they are programs commonly offered by institutions to a variety of students (e.g., career counseling). The term *ASD-specific service* refers to any service specifically designed to support students by targeting the functional limitations associated with ASD; this assistance is beyond the level of reasonable accommodations (e.g., social coaching). *Peer mentoring* refers to programs that utilize other students as educational and informational resources via one-on-one or small groups. For more description, see Brown and Coomes (2016).

Data Collection

The targeted population was the Director of Disability Resources at non-profit postsecondary educational institutions within the United States. Since ADA compliance is federally mandated, it is reasonable to assume the vast majority of postsecondary institutions will have one person designated as a disability services professional or ADA compliance officer, even if that role is only part of their job re-

sponsibilities. A list of postsecondary institutions was identified via the *Carnegie Classifications Data File* (Carnegie Foundation for the Advancement of Teaching, 2011). For-profit institutions, branch campuses, professional schools (e.g., seminaries), Tribal Colleges, and institutions in Puerto Rico or Guam were excluded to avoid duplicative or extraneous data. The sample frame had 2,629 institutions. The Institutional Review Board at Bowling Green State University approved this research prior to data collection.

A one-stage, stratified random design was employed to sample one disability services professional per postsecondary institution. Stratification was guided by previous research that categorized institutions as two-year public, four-year public, and four-year private (Collins & Mowbray, 2005, 2008). Because a comprehensive list of disability service providers does not exist, manual Internet searches were used to obtain contact information to achieve a random sample. If a disability services provider could not be located within the institution, (less than 20 cases), a substitute institution was randomly selected.

Recruitment emails were sent out to 1,245 email addresses and 483 individuals completed the survey, for a response rate of 38.8%. Not all email addresses identified during the manual search were valid, defined as individuals with continuous employment, in disability services, at the selected institution, during the three-month window of survey administration. A return rate is the number of respondents who answered the survey divided by the number of valid email addresses in the sample. Auto-reply responses indicated that 89 individuals did not have valid emails (e.g., no longer an employee or on maternity leave). In total, 1,156 eligible addresses existed, for a return rate of 41.9%.

Instrumentation

The existing literature did not have a comprehensive survey regarding interventions for students with ASD. In constructing a survey instrument, Creswell (2003) outlined validity and reliability as critical components. Content validity was addressed by reviewing other surveys that assessed interventions offered to college students with disabilities (e.g., Collins & Mowbray, 2005, 2008; Smith, 2007) and a panel of ASD experts, including faculty that study ASD and a director of disability services were employed to assess the survey. Reliability of the survey instrument was addressed through pilot testing with

20 institutions. Nominal changes to question wording, question format, and routing were made because of the pilot process; these changes were primarily to address screen reader accessibility. The survey contained 47 questions, because the survey employed question routing respondents saw between 35 and 47 questions. The survey had 11 demographic questions, 19 questions about services, three open ended questions, and two routing questions with the potential of 12 sub-questions.

Data Analysis Procedures

The survey data were transferred into SPSS 19™ and data were inspected for scores that were incongruent or outside of an accepted range (Creswell, 2005). Three participants were removed because data indicated a pattern of similar answers and the timing of their survey completion was substantively less than the average. Further, 11 participants were removed because their surveys were missing more than 50% of the data. The Kolmogorov-Smirnov statistic was used to assess normal distribution and histograms were employed to view outliers; none were found. The cleaned data had 469 participants.

Analysis techniques consisted of descriptive and inferential statistics. The first research question was addressed using descriptive statistics. Pearson chi-square test for independence was employed in research question two because both the independent and dependent measures were categorical. Cramer's V was used as the measure of effect size for nominal level variables. Gravetter and Wallnau (2012) provided a calculation for effect size in tables that are larger than 2x2; in a table with three rows and two columns the R-1 or C-1 equals 1, therefore a small effect size is .01, medium is .30, and large is .50. ANOVAs were used for variables that were a continuous and normally distributed. If the assumption of homogeneity of variances was violated, the Welch statistic was reported as a robust test of equality of means.

Research question three employed logistic regression models to explore factors that best predicted whether or not an institution would offer ASD-specific support services. A logistic method was selected because the dependent variable was dichotomous and regression allows for the prediction of outcomes. The dependent variable was created by transforming two survey questions into a composite dichotomous (yes/no) variable indicating if the institution offered ASD-specific support services. Independent vari-

ables were grouped into two different sets, institutional characteristics (e.g., institution type, geographic location, etc.) and institutional practices (e.g., ASD educational training for faculty/staff, peer mentoring, etc.).

Data were screened for linearity, normality, and homoscedasticity. Several regressions were developed through a nested building process using independent variables that demonstrated the greatest correlational value, added subsequent independent variables, noted the model's effectiveness, and used a chi-square test to establish if the new model was significantly different. The model presented, is the most parsimonious combination of independent variables that were either theoretically linked to, or statistically correlated with, the dependent variable.

Findings

Table 1 provides characteristics of survey respondents. Participants from different institution types responded at approximately the same rate; 146 public two-year institutions, 158 public four-year institutions, and 165 private four-year institutions participated. The distribution of institutional enrollment size followed the shape of a normal curve for two-year and four-year public institutions; the majority of private four-year institutions (55.8%) had an enrollment of 1,000-5,000 students. The modal category of full-time disability resource office (DRO) staff consists of one individual and the majority of institutions (72.1%) are members of the Association on Higher Education and Disability (AHEAD). The majority, 93.7%, of institutions in this sample had at least one student with ASD. Table 2 provides the average number of students registered with disability services and the average number of students registered with documentation for ASD by institution type.

Current Practices

An overwhelming majority of postsecondary institutions supported students with ASD via reasonable accommodations with an academic focus. For example, over 93% of the institutions provided a note taker, the use of an audio recorder, extended exam time, and alternative testing locations (See Table 3). Reasonable accommodations that addressed sensory and social limitations were less frequently offered; 44.7% of institutions provided sensory accommodations, 39.2% of institutions offer a single residence hall room for a reduced price and 55.5% provided

single rooms at cost. The prevalence of single room accommodations maybe slightly higher than these frequencies represent because some participating institutions do not have residence halls and therefore are not able to offer that accommodation.

General support services with an academic or counseling focus were provided by over 95% of the institutions surveyed (See Table 4). However, services were commonly administered by a campus department or office other than DRO. Support services with a social focus such as transition programs (43.6%) or peer mentoring (49.9%) were offered less frequently.

ASD-specific services were not provided as frequently as general support services; 132 out of 466 respondents (28.3%) indicated their institution offered free of charge ASD-specific services. Three respondents did not answer this question. Only 2.2% of respondents indicated that their postsecondary institution offered ASD-specific services for an additional charge.

Differences by Institution Type

There were significant differences by institution type in the number of students registered with documentation for ASD, Welch (2, 278.93) = 20.83, $p = .00$. The effect size, calculated using eta squared, was .084. Post-hoc comparisons using the Tukey HSD test indicated that the average number of students registered with documentation for ASD was significantly greater at two-year public institutions than four-year public and four-year private institutions. Furthermore, the average number of students registered with documentation for ASD was significantly greater at four-year public institutions than four-year private institutions.

Pearson chi-square tests for independence and Cramer's V as a test of effect size were utilized to determine if relationships existed between the categorical variables of institution type and the availability of reasonable accommodation or support services (See Table 5). Two reasonable accommodations had significant associations with institution type: the provision of a note taker χ^2 (2, $n = 463$) = 7.00, $p = .03$, $V = .12$ and priority class registration χ^2 (2, $n = 449$) = 18.42, $p < .001$, $V = .20$. Additionally, two types of general support services had significant associations with institution type: the existence of a disability-related student organization χ^2 (2, $n = 438$) = 27.86, $p < .001$, $V = .25$; and the existence of a peer mentoring program χ^2 (2, $n = 449$) = 13.60, $p < .001$,

$V = .17$. The effect size for these variables was small (Cohen, 1988).

Variables with significant differences by institution type that had a medium effect size were related to housing-specific accommodations. Since two-year public institutions often do not have residential facilities, these results could lack practical implications. Several of the general support services (e.g., career counseling) violated an underlying assumption of chi-square by having less than five counts per cell and indicating that the vast majority of institutions provide these services. There was not a significant relationship between institution type and the existence of ASD-specific support services χ^2 (2, $n = 466$) = 1.41, $p = .50$, $V = .06$.

Predictors of ASD-Specific Service

The initial relationship between number of students registered with documentation for ASD and whether or not an institution offered ASD-specific services was investigated using Spearman's rho correlations coefficient. Spearman's rho is the non-parametric alternative used when one of the variables in the correlation is categorical. There was a weak positive relationship between the two variables $r = .12$, $n = 466$, $p < .01$ indicating that an increase in the number of students registered with documentation for ASD was associated with an increase in provision of ASD-specific services. The coefficient of determination for this correlation was .014; therefore, the number of students registered with documentation for ASD explained 1.4% of the variance in the provision of ASD-specific services.

Logistic regression was employed to predict whether or not a postsecondary institution would offer ASD-specific support services (See Table 6). The existence of a peer mentoring program, the existence of sensory accommodations, the number of students registered with documentation for ASD, and the provision of a single residence hall room at a reduced price created the most parsimonious model. This model was statistically significant, χ^2 (4, $n = 400$) = 49.13, $p < .001$ and correctly classified 74.3% of the cases. The model explained between 11.6% (Cox and Snell R squared) and 16.5% (Nagelkerke R squared) of the variance.

The presence of peer mentoring, with an odds ratio of 3.12, was the strongest predictor of the institution offering ASD-specific services. Respondents who worked at institutions with peer mentoring were

over three times more likely to report their institution had ASD-specific services than those who did not have peer mentoring. The presence of sensory accommodations had an odds ratio of 1.91; respondents who worked at institutions with sensory accommodation were almost twice as likely to report their institution had ASD-specific services in comparison to institutions that did not have sensory accommodations. In spite of having a weak correlation with the dependent variable as indicated above, the number of students with ASD was included in the regression analysis for theoretical reasons. The number of students registered with documentation for ASD had an odds ratio of 1.02. After controlling for all other factors in the model, for each additional student registered with documentation for ASD, respondents were 1.02 times more likely to report their institution offered ASD-specific services. Although included in the model for theoretical reasons and to test the importance of chi-square differences, the provision of a single residence hall room at a reduced price was not statistically significant.

Discussion

The purpose of this was to survey and examine supports and interventions for students with ASD in postsecondary education. This study confirms existing literature regarding the prevalence of some types of reasonable accommodations. The majority of reasonable accommodations for students with ASD are offered at a rate that is consistent with, or slightly higher than, the rate at which reasonable accommodations are provided to all students with disabilities (Raue & Lewis, 2011; Stodden et al., 2001). For example, 99.3% of the survey respondents in this study indicated that students with ASD received additional exam time. In comparison, NCES indicated that the vast majority of institutions (93%) provided additional exam time to students with disabilities (Raue & Lewis, 2011).

Currently, national disability surveys (e.g., Raue & Lewis, 2011; Stodden et al., 2001) do not provide information regarding sensory accommodations, disability-focused student organizations, peer mentoring programs for students with disabilities, or ASD-specific services. This research extends the existing literature, finding that 44.7% of institutions offer sensory accommodations, 37.2% of institutions have a disability-focused student organization, and 49.9% of

institutions provide peer mentoring programs. This research also addresses the paucity of information regarding services for students with ASD (Dallas et al., 2015), finding that 28.3% of institutions offered free of charge ASD-specific services and 2.2% of institutions provided fee-based ASD-specific services.

This research highlights the gap between the enrollment of students with ASD and provision of services for these students. In light of the fact that there are significant differences in the number of students with ASD by institution type, the lack of a difference in the provision of sensory accommodations, most general support services, and ASD-specific services is notable. A greater number of students with ASD are attending two-year public institutions; yet those institutions are not providing a greater level of support.

While student use of accommodations is well-documented (e.g., Hong, 2015; Marshak et al., 2010; Stein, 2013), existing literature does not address institutional behavior, and it is unknown why some institutions offer greater levels of ASD support while other institutions do not. This research extends the literature by examining factors that predict institutional behavior and supports for students with ASD. Specifically, with an odds ratio of approximately 1, the number of students with ASD is not a strong practical indicator. There are several plausible explanations for this finding. It is possible that students with ASD have not reached a critical population size that warrants a unique set of specialized services or it is possible that providing specialized services is not feasible because the majority (67.7%) of institutions have 2 or less full-time DRO staff. The strength of peer mentoring as a predictor indicates that when it comes to ASD services, the best predictor of institutional behavior is, other institutional behaviors. This is particularly notable in that, 23.4% of peer mentoring occurred outside of the DRO, indicating that some colleges or universities invest in an institutional culture of student support.

Implications for Practice

The present research has implications for practitioners and administrators seeking to support the success of students with ASD. For accommodations to be effective, they must fit the students' functional limitations (Kurth & Mellard, 2006; Lindstrom, 2007). As the number of students with ASD increases, it is necessary for postsecondary institutions to assess the

types of accommodations provided and evaluate if current practices support students' functional limitations. This research establishes that institutions provide accommodations with an academic focus more frequently than accommodations with a sensory or social focus. Yet, for many students with ASD, sensory and social functional limitations affect learning (Madriga, 2010). Tailoring services to address functional limitations within the learning environment, is a best practice for disability professionals supporting students with ASD (Brown & Coomes, 2016).

Academic engagement and co-curricular engagement are important predictors of retention (Mamishvili & Koch, 2011). For students with disabilities, mentoring programs enhance self-efficacy, learning strategies, and study skills (Zwart & Kallemeyn, 2001). Yet, one of the functional limitations students with ASD face is social interactions (Bedrossian & Pennamon, 2007). It is notable then, that one of the best predictors of ASD-specific services was the existence of peer mentoring programs. Practitioners should understand that this finding does not necessarily imply that students with ASD will directly benefit from engagement in mentoring. Rather, this finding indicates that colleges with peer mentoring have an institutional culture that is willing to invest fiscal and staffing resources in ASD-specific services.

The findings are particularly important for administrators who follow data-driven budgetary decisions. Practitioners with limited resources can leverage the idea of investing in an institutional culture of support by developing or growing general services (e.g., peer mentoring) that benefit all students as a forerunner to building ASD specific programs. Further, the finding that two-year institutions serve a significantly greater number of students with ASD may be useful for practitioners at community colleges who are advocating for additional staff or funding.

Limitations and Future Research

There are limitations to this study. Although respondents were randomly selected, participation was voluntary and therefore open to self-selection bias. Disability resource providers might be more likely to respond if they have students with ASD on their campuses.

There is substantive variation across institutions in disability documentation requirements and accommodation practices (Lindstrom, 2007; Madaus et al.,

2010). Moreover, there are differences between interpreting the letter of the law and the spirit of the law. As outlined in the literature review, the letter of the law informed this research; however, the spirit of the law guided it. To that end, operational definitions and survey questions focused on exploring ASD issues rather than delimiting legal compliance. I present data for the specific types of accommodations as a method of addressing variation; the intent is to allow the reader to discern which specific accommodations are applicable within the academic standards of their institution.

The perceptions of faculty members are critical in the accommodations process (Kurth & Mellard, 2006; Rao & Gartin, 2003) and research indicates that faculty think the inclusion of students with ASD in their classroom would take more time and would disturb the class routine (Gibbons et al., 2015). Given their importance in the accommodations process, future studies should explore methods that disability resource providers can use to educate faculty about ASD.

Co-occurring diagnosis is common (Boutot & Myles, 2011) and young adults with ASD often experience anxiety, ADHD, and depression (Ghaziuddin, 2005). The current research focused solely on ASD; but it is important to see the student as a complex individual and future research should take an intersectional approach.

A significant proportion, 25% of the respondents in this study, were not members of AHEAD and these practitioners may not have access to disability professional development opportunities. Future research should employ random selection and representative sampling to gain a better picture of disability practices and educational opportunities for disability resource providers. Future research should also focus on improving national data collection for sensory accommodations, investigating promising practices at institutions with ASD-specific programs, and exploring the effectiveness of ASD-specific supports on student academic success. Finally, the quality of peer mentoring programs should be explored further via qualitative methods.

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Table 1

Participating Disability Resource Practitioners by Institution Type

	Public two-year (n=146)	Public four-year (n=158)	Private four-year (n=165)	Total (n=469)
Characteristics	n (%)	n (%)	n (%)	n (%)
<i>Enrollment</i>				
Under 1,000	5 (3.3)	2 (1.3)	30 (18.2)	37 (7.9)
1,000 – 5,000	41 (28.1)	29 (18.4)	92 (55.8)	162 (34.5)
5,000 – 10,000	43 (29.4)	39 (24.7)	19 (11.5)	101 (21.5)
10,000 – 20,000	36 (24.6)	38 (24.1)	18 (10.9)	92 (19.6)
20,000 – 30,000	13 (8.8)	29 (18.4)	4 (2.4)	46 (9.8)
More than 30,000	8 (5.4)	21 (13.3)	2 (1.2)	31 (6.6)
<i>Location</i>				
Urban	45 (30.8)	53 (33.6)	65 (39.4)	163 (34.8)
Suburban	45 (30.8)	44 (27.9)	60 (36.4)	149 (31.8)
Rural	46 (31.5)	60 (37.9)	37 (22.4)	143 (30.5)
Multiple campus	10 (6.8)	1 (0.6)	3 (1.8)	14 (3.0)
<i>Full-time staff</i>				
None	21 (14.5)	13 (8.2)	38 (23.0)	72 (15.4)
1	45 (30.8)	36 (22.8)	67 (40.6)	148 (31.6)
2	27 (18.6)	34 (21.5)	36 (21.8)	97 (20.7)
3	13 (8.9)	18 (11.4)	11 (6.7)	42 (9.0)
4	13 (8.9)	16 (10.1)	6 (3.6)	35 (7.5)
5	8 (5.5)	12 (7.6)	3 (1.8)	24 (5.1)
6 or more	18 (12.4)	29 (18.4)	4 (2.4)	51 (10.9)
<i>Reporting structure</i>				
Academic affairs	20 (13.7)	41 (25.9)	74 (44.8)	135 (28.8)
Student affairs	126 (86.3)	117 (74.1)	91 (55.2)	334 (72.1)
<i>AHEAD member</i>				
Yes	97 (66.4)	127 (80.4)	124 (75.2)	348 (74.2)
No	49 (33.6)	31 (19.6)	41 (24.8)	121 (25.8)

Table 2

Number of Students Registered with Disability Resources by Institution Type

Characteristics	Mean	SD
Students with disabilities		
Two-year public	412.59	451.71
Four-year public	425.87	349.31
Four-year private	181.17	232.14
Students with ASD		
Two-year public	16.37	18.85
Four-year public	11.96	9.87
Four-year private	6.39	10.65

Note. $n=469$

Table 3

Reasonable Accommodations Offered to Postsecondary Students with ASD

Type of Accommodation	DRO <i>n</i> (%)	Other Office <i>n</i> (%)	Not Provided <i>n</i> (%)	Total <i>n</i>
Note taker	421 (90.9)	12 (2.6)	30 (6.5)	463
Priority registration	267 (59.5)	32 (7.1)	150 (33.4)	449
Use of audio recorder	420 (91.9)	11 (2.4)	26 (5.7)	457
Extended exam time	456 (97.6)	8 (1.7)	3 (0.6)	467
Alternate test location	440 (94.6)	21 (4.5)	4 (0.9)	465
Sensory accommodations	153 (35.1)	42 (9.6)	241 (55.3)	436
Single room (reduced price)	93 (22.1)	72 (17.1)	256 (60.8)	421
Single room (at cost)	128 (28.5)	121 (26.9)	200 (44.5)	449

Note. DRO=Disability Resource Office

Table 4

General Support Services Offered to Postsecondary Students with ASD

Support Service	DRO <i>n</i> (%)	Other Office <i>n</i> (%)	Not Provided <i>n</i> (%)	Total <i>n</i>
Tutoring	182 (39.5)	256 (55.5)	23 (5.0)	461
Transition program	107 (24.4)	84 (19.2)	247 (56.4)	438
General counseling	184 (39.7)	262 (56.5)	18 (3.9)	464
Career counseling	147 (31.8)	306 (66.2)	9 (1.9)	462
Student organization	119 (27.2)	44 (10.0)	275 (62.8)	438
Peer mentor program	119 (26.5)	105 (23.4)	225 (50.1)	449

Note. DRO=Disability Resource Office

Table 5

Chi-square Test: Accommodations, General Services, and ASD-Specific by Institution Type

Item	Yes <i>n</i> (%)	No <i>n</i> (%)	χ^2	<i>Df</i>	<i>V</i>	<i>n</i>
<i>Note taker</i>			7.00*	2	.12	463
Two-year public	136 (31.4)	8 (26.7)				
Four-year public	150 (34.6)	5 (16.7)				
Four-year private	147 (33.9)	17 (56.7)				
<i>Priority registration</i>			18.42**	2	.20	449
Two-year public	80 (26.8)	60 (40.0)				
Four-year public	121 (40.5)	31 (20.7)				
Four-year private	98 (32.8)	59 (39.3)				
<i>Audio recorder</i>			2.23	2	.07	457
Two-year public	137 (31.8)	5 (19.2)				
Four-year public	146 (33.9)	9 (34.6)				
Four-year private	148 (34.3)	12 (46.2)				
<i>Extended exam time</i>			5.58	2	.11	467
Two-year public ^a	145 (31.3)	0 (0.0)				
Four-year public ^a	158 (34.1)	0 (0.0)				
Four-year private ^a	161 (34.7)	3 (100)				
<i>Alternative test location</i>			7.34*	2	.13	465
Two-year public ^a	144 (31.2)	0 (0.0)				
Four-year public ^a	156 (33.8)	0 (0.0)				
Four-year private ^a	161 (34.9)	4 (2.4)				
<i>Tutoring</i>			1.59	2	.06	461
Two-year public	136 (31.1)	9 (39.1)				
Four-year public	150 (34.2)	5 (21.7)				
Four-year private	152 (34.7)	9 (39.1)				
<i>Single room (reduce price)</i>			47.77**	2	.34	421
Two-year public	21 (12.7)	114 (44.5)				
Four-year public	65 (39.4)	73 (28.5)				
Four-year private	79 (47.9)	69 (27.0)				
<i>Single room (at cost)</i>			100.12**	2	.47	449
Two-year public	27 (10.8)	109 (54.5)				
Four-year public	108 (43.4)	44 (22.0)				
Four-year private	114 (45.8)	47 (23.5)				
<i>Transition program</i>			2.82	2	.08	438
Two-year public	58 (30.4)	80 (32.4)				
Four-year public	73 (38.2)	76 (30.8)				
Four-year private	60 (31.4)	91 (36.8)				
<i>Sensory accommodations</i>			5.70	2	.11	436
Two-year public	49 (25.1)	86 (35.7)				
Four-year public	74 (37.9)	76 (31.5)				
Four-year private	72 (36.9)	79 (32.8)				

Table 5, *continued*

Item	Yes <i>n</i> (%)	No <i>n</i> (%)	χ^2	<i>Df</i>	<i>V</i>	<i>n</i>
<i>General counseling</i>			25.23 **	2	.23	464
Two-year public	127 (28.5)	15 (83.3)				
Four-year public ^a	157 (35.2)	0 (0.0)				
Four-year private ^a	162 (36.3)	3 (16.7)				
<i>Career counseling</i>			.88	2	.04	462
Two-year public ^a	140 (30.9)	4 (44.4)				
Four-year public ^a	153 (33.8)	2 (22.2)				
Four-year private ^a	160 (35.3)	3 (33.3)				
<i>Student organization</i>			27.86 **	2	.25	438
Two-year public	51 (31.3)	90 (32.7)				
Four-year public	77 (47.2)	69 (25.1)				
Four-year private	35 (21.5)	116 (42.2)				
<i>Peer mentor</i>			13.60 **	2	.17	449
Two-year public	53 (23.7)	88 (39.1)				
Four-year public	88 (39.3)	62 (27.6)				
Four-year private	83 (37.1)	75 (33.3)				
<i>ASD-specific service</i>			1.41	2	.06	466
Two-year public	38 (27.5)	108 (32.9)				
Four-year public	50 (36.2)	106 (32.6)				
Four-year private	50 (36.2)	114 (34.8)				

Note. * $p < .05$. ** $p < .01$. ^a Indicates cells that violated the minimum 5 case assumption.

Table 6

Logistic Regression Predicting Provision of ASD-Specific Services

Predictor	<i>B</i>	S.E.	Wald	<i>Df</i>	O.R.
Single room at reduced price					
Yes	0.45	.25	3.34	1	1.57
No (omitted)					
Sensory accommodation					
Yes	0.65 **	.24	7.21	1	1.91
No (omitted)					
Peer mentoring program					
Yes	1.14 **	.24	21.72	1	3.12
No (omitted)					
Number of students with ASD	0.02 *	.01	4.31	1	1.02
Constant	-2.19 **	.25	75.06	1	.11

Note. * $p < .05$. ** $p < .01$. *n* =400.

Breaking Barriers and Building Bridges: Understanding How a Student Organization Attends to the Social Integration of College Students with Disabilities

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Abstract

While scholars have indicated that social involvement is crucial to students' development and success in college life and beyond, very little empirical research investigates how students with disabilities become socially integrated in college settings. In response, this qualitative study examines the social experiences of five college students with physical disabilities who participate in LEVEL, a student organization that aims to create accessible social experiences for students of all abilities and educate students and the broader community about ableism. The key findings of this study revealed that participants experienced feelings of isolation prior to joining LEVEL, LEVEL provided an opportunity to dispel ableist assumptions and misconceptions, and LEVEL engendered the formation of friendships. These findings have direct significance in advancing the field of disability in higher education and aiding in the design of collegiate programs and organizations that raise ableism awareness and foster social integration between students of all abilities.

Keywords: Ableism, socialization, service delivery, physical disability

The stressors of college can pose a challenge for any individual, as students often report feeling overwhelmed and anxious when negotiating complex academic standards with their newly forged autonomy (Misra & McKean, 2000). Unfortunately, the difficulties that a person might encounter in this environment are compounded when he or she has a disability. As recently as 1970, students with documented disabilities could be rejected from colleges and universities across the United States solely on account of their disability status (Paul, 2000). While legislation such as Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 mitigates this discrimination, college students with disabilities still maintain "disproportionally high course failure rates, low retention rates, and low graduation rates" (Murray, Lombardi, & Kosty, 2014, p. 31).

These statistics are especially salient for students with physical disabilities, as researchers (Dovidio, Pagotto, & Hebl, 2011; Krahe & Altwasser, 2006;

Read, Morton, & Ryan, 2015) found that they are stigmatized because they visibly fall outside of the range of what is considered normative. This stigma is rooted in ableism, "a pervasive system of discrimination and exclusion that oppresses people with disabilities" (Rauscher & McClintock, 1996, p. 198). Ultimately, ableism privileges those who are typically-abled (i.e., a person who possesses physical, social, emotional, and/or cognitive characteristics that align with what is perceived as normative) and devalues those who do not adhere to the norm. While some individuals with disabilities choose to "pass," or conceal social markers of their disability as to avoid stigma and align with what is socially construed as "normal," passing is difficult, if not impossible, for an individual with an apparent physical disability (Brune & Wilson, 2013).

Since typically-abled individuals can exhibit bias against or avoidance of people with physical disabilities, college students with physical disabilities face a unique set of challenges related to their integration

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into the university environment (Dovidio et al., 2011). More specifically, the stigma associated with disability has the potential to negatively affect a person with a disability, as one's collegiate experience can shape his or her belief system, self-concept, and identity (Matthews, Ly, & Goldberg, 2015; Read et al., 2015). In order to rectify these issues, Hadley (2011) has called for "cultural centers and student organizations for students with disabilities to support connections between students with disabilities and their allies on campus" (p. 80).

The current body of literature, however, lacks empirical work focused on university students with physical disabilities and their interaction in said social support systems. Of those studies that examine socialization between typically-abled college students and their peers with disabilities, the emphasis has primarily been on invisible disabilities such as autism spectrum disorder ([ASD]; Matthews et al., 2015), attention deficit hyperactivity disorder ([ADHD]; Meyer, Myers, Walmsley, & Laux, 2012) or intellectual disabilities (Griffin, Summer, McMillan, Day, & Hodapp, 2012). Moreover, the research that has addressed physical disability and collegiate socialization has explored the benefits of participation in athletics (Blinde & Taub, 1999; Huang & Brittain, 2006; Taub, Blinde, & Greer, 1999; Wessel, Wentz, & Markle, 2011) as opposed to group or club affiliations.

In response, this study focuses a lens on five college students with physical disabilities that participate in LEVEL, a student organization formed at a private, Mid-Atlantic university in 2011. LEVEL aims to create accessible social experiences for students of all abilities and educate students and the broader community about ableism. Thus, this qualitative study is premised on the question: *How are the social experiences of college students with disabilities affected by their participation in LEVEL?*

College Students with Disabilities: Integration, Accessibility, and Ableism

The theoretical framework used to guide this research melds Tinto's (1975, 1993) theory of university integration and retention with experiences specific to college students with disabilities. In addition, it addresses the ways in which ableism complicates the integration of college students with physical disabilities.

Retention, Matriculation, and Integration

In the United States, the number of individuals with disabilities who graduate from high school and pursue a postsecondary education is on the rise (Belch, 2004; Wagner, Newman, Cameto, Garza, & Levine, 2005). Wagner et al. (2005) found that 26% of people with disabilities participated in postsecondary education, in the form of either two-year (20%) or four year (6%) programs, after leaving high school. However, the retention of students with disabilities in both two- and four-year colleges remains an issue. Drawing on data from the Beginning Postsecondary Students Study ([BPS]; U.S. Department of Education, 2001), Steele and Wolanin (2004) noted that 41% of all college students with disabilities left school prior to graduation as compared to 33% of their typically-abled peers. According to the 2013 American Community Survey (ACS), only 31.6% of individuals with orthopedic impairments and 30.4% of individuals who identified as blind or visually impaired have attained college or associates degrees (Erickson, Lee, & von Schrader, 2015). As a result, individuals with disabilities, especially those with disabilities related to mobility or vision, are less likely to obtain a postsecondary degree (Wagner et al., 2005).

Tinto's (1975) seminal work on the processes that lead individuals to drop out of institutions of higher education provides a robust theoretical frame for examining the aforementioned statistics. Drawing on the work of Durkheim (1961) and Spady (1970), Tinto (1975) argued that persistence in college is the result of myriad interactions between an individual and the academic and social systems within his or her institution. As such, he has identified two major factors—academic and social integration—as having an effect on issues of college student retention. The higher the degree of integration, the more likely it is that an individual persists in college.

Academic Integration and Physical Disabilities

From an academic standpoint, integration relates to grade performance (i.e., the ability to meet academic standards) and intellectual development (i.e., one's identification with the norms of the given academic system). In order to integrate academically an individual is able to find congruence between himself or herself and the "intellectual climate" of the college or university. Additionally, that person must be able to perform at or above a desired academic level (Tinto, 1975).

Academically, many college students with physical disabilities require accommodations, such as extended time or use of readers or transcribers, in order to fairly and fully participate in the postsecondary environment. Unfortunately, accommodations are not always easy to apply for, and some students with disabilities avoid seeking these supports because of the level of self-exposure that this process can entail (Marshak, Van Wieren, Ferrell, Swiss, & Dugan, 2010; Murray et al., 2014; Paul, 2000). In their exploratory study of the barriers that prevent students with disabilities from seeking and utilizing these support services in college, Marshak et al. (2010) identified five issues as most salient: identity concerns, desire to avoid negative social reaction, insufficient knowledge regarding how to apply for an accommodation, perceived quality and usefulness of services, and negative experiences with professors. Ultimately, failure to pursue or receive necessary supports has the potential to jeopardize one's grade performance (Pingry O'Neill, Markward, & French, 2012), which Tinto (1975) identified as critical to one's academic integration.

Academic service delivery is another key consideration for college students with physical disabilities. Since the delivery of accommodations is often enacted by faculty or a member of the campus's Office of Disability Services (ODS), many college students with disabilities end up spending the majority of their time with adults rather than their same-aged peers (Marshak, et al., 2010; Morris, 2001; Paul, 2000). While this can prove academically beneficial to the student, these interactions have the potential to limit the development of peer-to-peer relationships (Morris, 2001).

Social Integration and Physical Disabilities

According to Tinto's (1975) framework, social integration is comprised of three main elements. First, he notes the importance of *interaction with faculty and administrative personnel within the college*, as faculty mentors can provide much needed support for college students as they transition into higher education. Of equal importance are *semi-formal extracurricular activities*, which consist of structured social engagements such as university clubs, organizations, or Greek life. Finally, *informal peer group associations* represent the friendships that form outside of, and often as a result of, semi-formal extracurricular activities.

While social integration is critical for any student at the postsecondary level (Tinto, 1975), it is partic-

ularly important to consider in relation to physical disability, as it has been shown to foster competence, autonomy, and the formation of a healthy self-identity (Belch, 2004; Hadley, 2011; Morris, 2001; Wessel et al., 2011). However, few students with disabilities actually participate in social groups and organizations due to the existence of physical barriers (e.g., lack of accessibility within the environment itself) or the attitudinal barriers of their typically-abled classmates (Dovidio et al., 2011).

Although colleges and universities are required to comply with the Americans with Disabilities Act (1990), issues related to ease of physical accessibility, both within the classroom and across the campus at large, still abound. In fact, researchers (Rimmer, Riley, Wang, Rauworth, & Jurkowski, 2004; Simonson, Glick, & Nobe, 2013) found that students' perceptions of campus accessibility directly inform their engagement at that institution. For these reasons, the physical environment of a college campus plays into a student's sense of belonging, as ease of accessibility engenders his or her feelings of inclusivity.

Peer attitudes prove equally important. Scholars have revealed that many college students experience issues with peers and related social integration largely as the result of subtle or overt forms of ableism (Belch, 2004; Dovidio et al., 2011; Hadley, 2011). Ableism separates individuals with disabilities from those who are typically-abled by valuing what is considered socially normative. As Hehir (2007) explained, this can mean "assert[ing] that it is preferable for a child to read print rather than Braille, walk rather than use a wheelchair, spell independently rather than use a spell-checker, [and] read written text rather than listen to a book on tape" (p. 9). Ableism is particularly problematic at the collegiate level. For example, a typically-abled student might exercise implicit ableism toward a peer with a physical disability by hosting a social event off-campus without considering the accessibility of the venue, or display overt ableism, such as avoiding contact with a peer with a disability because he is non-verbal. In fact, research (Dovidio et al., 2011; Read et al., 2015) has shown that many typically-abled college students actively choose not to interact with peers with disabilities because they are unsure of how to navigate the relationship.

Since the often negative attitudes of typically-abled peers can affect the emotional well-being (Hutcheon & Wolbring, 2012; Lombardi, Murray, & Gerdes, 2011; Murray et al., 2014; Paul, 2000; Stein, 2014) and reten-

tion (Belch, 2004; Matthews et al., 2015) of students with disabilities, integration into semi-formal extracurricular activities, such as clubs or student groups, is critical. As Hadley (2011) explained:

If successful integration and involvement does not happen, there will be a greater chance for at-risk students to feel isolated and withdraw. This is certainly applicable to students with disabilities, whose disabilities may require additional time to do daily collegiate tasks (e.g., homework, getting around campus) or their ability to interact with others, academically and socially. (p. 79)

Thus, an individual's capacity to accomplish collegiate tasks and interact with peers is directly informed by his or her ability to integrate, which ultimately influences that person's college trajectory.

In addition to being able to integrate into student organizations, an individual with a disability must be provided with opportunities to form meaningful personal relationships with campus peers. Belch (2004) contended that doing so "permits individuals to feel noticed, feel important enough to be cared about, feel empathy from others, and feel appreciated for one's efforts and contributions" (p. 9). In line with Tinto's (1975) theory of college persistence, these peer group associations are essential to students' well-being, retention, and success in higher education. While interpersonal relationships may occur informally (i.e., through typical day-to-day interaction between students on campus), interactions via extracurricular activities often engender friendship (Tinto, 1993).

Since individuals with disabilities can encounter ableism as related to their perceived differences, it is of paramount importance that they engage in programs that facilitate social inclusion (de Boer, Pijl, & Minnaert, 2012). However, there are few on-campus organizations or groups that offer meaningful, positive social interaction between individuals with physical disabilities and their typically-abled peers. Moreover, while studies (Patrick & Wessel, 2013) have investigated the effects of faculty mentorship on the transition experiences of college students with disabilities, very little empirical research examines how students with physical disabilities experience social integration with their university peers. Thus, the purpose of this study was to understand how LEVEL, a student organization associated with the ODS, affected the social experiences of college students with physical disabilities.

Methods

Qualitative methodology was selected to gain a better understanding of the shared experiences of five participants engaging in LEVEL during the 2013-2014 academic year (Creswell & Creswell, 2007). As such, pre- and post-program interviews shed light on the ways in which the social experiences of participants were affected by their involvement in LEVEL.

Research Context

LEVEL is an on-campus, student organization formed at a private, Mid-Atlantic university in 2011. LEVEL aims to create accessible social experiences for students of all abilities and educate students and the broader community about ableism. As such, the linguistic choice of a palindrome, "level," versus an acronym, is intended to capture the reciprocal nature of the partnership forged between individuals with disabilities and their typically-abled peers. LEVEL was founded by a university student and is currently run by an executive board of students who oversee scheduling, financial operations, and public relations. As a student organization, it is affiliated with the ODS on the university's campus. Several members of the executive board self-identify as having a disability.

As means of directly facilitating socialization, LEVEL hosts bi-weekly meetings and several fully accessible on- and off-campus social events that include trips to sporting events, music venues, museums, and other local attractions. In addition, the yearly retreat is held at a fully accessible outdoor ropes course. In planning fully accessible social events, the organization aims to promote ableism awareness by calling students' attention to the inaccessibility of many popular social events and destinations for students, such as many local bars, restaurants, and even some campus dormitories. LEVEL members also plan events that are specifically intended to raise ableism awareness more broadly across campus, as they conduct panels, bring in guest speakers, and host an annual on-campus fundraiser. These events are attended by students of all abilities.

Additionally, members of LEVEL work collaboratively to complete what are referred to as "LEVEL hours." During these hours, students with disabilities complete academic assignments alongside university peers; these peers can function as their scribes, take notes, or otherwise facilitate accommodations that would have been previously provided by an aide or an individual associated with the ODS. While the hours

usually involve a typically-abled student providing accommodations to a peer with a disability, individuals with disabilities also perform this function. In all cases, these partnerships are unique, as they replace the student-adult dyad and offer a point of interaction between same-aged peers. Although these hours contain an academic component, the intention is to facilitate social connections between students within LEVEL.

At the time of this study, 32 individuals were actively participating in LEVEL; 27 students were providing LEVEL hours to five peers with physical disabilities. One student with a physical disability both received and provided LEVEL hours. Members of LEVEL join voluntarily and do not receive compensation. While some students are involved for only one semester, others participate for the duration of their college experience. Although only four years have transpired since its inception, LEVEL has gained significant momentum on the university campus. As of 2014, university students have provided over 1,500 LEVEL hours. Given this description, LEVEL appears to represent what Tinto referred to as “a semi-formal extracurricular activity,” as it is a student organization that occurs within the social system of the university (Tinto 1975, 1993).

Participants

Five college students with physical disabilities agreed to participate in this research; at the time of this study, these were the only individuals receiving LEVEL hours. The participants all self-identified as having disabilities and were registered with the ODS on the university’s campus. Additionally, all participants self-identified as White. Four participants used motorized wheelchairs, and one participant self-identified as blind and worked with a service dog. One of the five participants was non-verbal and communicated through use of a laminated sheet containing an alphabet, numbers, and high-frequency words or by utilizing a Dynavox, a form of assistive technology for speech. Table 1 provides additional demographic information.

Researchers

The research team was comprised of four members: one female professor, who served as the Primary Investigator (PI); one female graduate research assistant; one undergraduate female research assistant; and one male staff member, who works as the Assistant

Director of ODS at the university. All members of the research team engaged in aspects of the data collection and analysis for this study. All researchers were affiliated with the university at the time of the study and self-identified as White and typically-abled. The professor teaches in the education program at the university and has prior experience as a secondary special educator. At the time of the study, the undergraduate research assistant was a senior Human Services major who provided LEVEL hours from her sophomore through senior years, and the graduate research assistant was a second-year Master’s student in the Clinical Counseling program.

The PI and graduate research assistant were involved in interviewing, transcribing, de-identifying, and analyzing participant data. Since the undergraduate research assistant and the Assistant Director of ODS had significant personal and professional relationships with participants, they worked with de-identified data during the data analysis process; this was intended to lessen the pressure participants might have felt to give socially desirable answers to these individuals.

Data Collection

The research team utilized pre- and post-program interviews in order to get a sense of how the participants’ social experiences were affected by LEVEL. Per the data collection schedule, pre-program interviews were conducted and collected between September and October of 2013, and post-program interviews occurred between April and May of 2014. The pre- and post-program interviews each lasted approximately one hour. During this time, participants were interviewed in-person by one of the members of the research team using a semi-structured interview format. In line with the purpose of the study and its research design, both interview protocols contained questions related to understanding participants’ social experiences in LEVEL. For example, we asked, “What role has LEVEL played in your collegiate social experience?” and “Describe the challenges and successes you are having/have had through participation in LEVEL.” To maintain confidentiality and anonymity, we assigned each participant a pseudonym.

Data Analysis

In order to identify, analyze, and report themes, the transcribed interviews were analyzed using Miles,

Huberman, and Saldana's (2014) methods for qualitative data analysis. We selected this process because it allowed us to identify the core meanings evident in the data as related to our research objective. Pre- and post-interviews were looked at as a whole. Throughout the coding process, we used ATLAS.ti, a PC based data analysis program. During the first cycle of data analysis, we utilized deductive and inductive coding procedures. Deductive codes were determined prior to the study; in this case, we looked for instances where participants described "LEVEL's effect on social experience" and "role of social experience in college." These *a priori* codes were based on our research question: *How are the social experiences of college students with disabilities affected by their participation in LEVEL?*

Next, we looked for inductive, *in vivo* codes across the data. *In vivo* codes draw on the emic words and phrases offered by study participants, and they are particularly appropriate for "studies that prioritize and honor the participant's voice" (Miles, Huberman, & Saldana, 2014, p. 74). Given that voice—especially the voices of individuals with disabilities—is critical to this study both methodologically and fundamentally, providing a space for emic language to emerge within the analysis process was key. Several *in vivo* codes emerged during this data analysis process, which included the phrases "used to feel alone" and "people avoided me" when describing experiences prior to LEVEL and "real friends" and "never could have imagined this" after joining.

During the second round of coding, we grouped the initial inductive and deductive codes into themes. The first theme, "isolation prior to LEVEL," emerged after reading through the initial codes and noting the places where participants spoke of struggling with socialization during their K-12 experience as well as upon entering the university. The next theme was "navigating ableism in college." Data appeared to indicate that ableism existed within and outside of LEVEL. However, it seemed that participants' navigation of ableist encounters differed according to group in question (i.e., the university on the whole or LEVEL as a smaller sub-set of the university population), as they appeared much more comfortable addressing ableism within LEVEL. Finally, "friendship" surfaced as a salient theme; in all cases, participants spoke of forming meaningful relationships as a result of their involvement in LEVEL. This process resulted in an overall description of how the social experienc-

es of college students with disabilities were affected by their participation in LEVEL (Olivant, 2015).

Trustworthiness

This study was approved by the university's Institutional Review Board in August 2013, and participants were required to complete the Informed Consent Form to take part in the research project. The researchers also utilized several reliability procedures as a means of validating research findings (Gibbs, 2007). First, the researchers established a code book, which helped mitigate the possibility that researchers would interpret the meanings of codes in different ways. The researchers also employed inter-coder agreement 95% of the time, whereby it was determined that they agreed upon codes when reviewing the same sections of data. In the 5% of cases where researchers coded data differently, there was an open discussion regarding code selection; the researchers conferred until agreement was reached.

Researchers engaged in member checking with two participants in order to verify the themes identified by the researchers and to give participants an opportunity to adjust inaccurate themes (Lincoln & Guba, 1985). During the transcription process, participant identities were immediately coded. The researchers also attempted to bracket their personal experiences with disability as well as their personal assumptions throughout the research design, data collection, and data analysis stages (Creswell & Creswell, 2007). This was addressed through reflexive journaling, which allowed researchers to identify their presuppositions regarding the research project (Zenobia, Chan, & Chien, 2013). Finally, in order to increase transferability, we offer detailed background data and description of the experience to establish the context of this study and allow comparisons to be made (Creswell & Creswell, 2007; Shenton, 2004).

Findings

The purpose of this study was to understand how LEVEL, a student organization associated with the ODS, affected the social experiences of college students with physical disabilities. Findings from this study were divided into three themes: (a) participants experienced social isolation prior to LEVEL, (b) LEVEL provided an opportunity to dispel ableist assumptions and misconceptions, and (c) LEVEL engendered friendship. These themes revealed that the

LEVEL experience was largely positive for each of the five participants, as they noted the ways that LEVEL increased their social integration and related feelings of inclusivity.

Participants Experienced Social Isolation Prior to LEVEL

Interviews revealed that all participants encountered issues related to socialization prior to their involvement in LEVEL. More specifically, they noted that the often-exclusive attitudes of typically-abled individuals, whether in the K-12 environment or in society at large, significantly influenced their feelings of social exclusion. Along these lines, they discussed many of the stereotypes associated with their disabilities, the ableist attitudes they encountered, as well as the ways in which these external attitudes influenced their social interactions.

When discussing her high school experience, Grace reflected, "People thought I had a cognitive disability and were shocked when I said intelligent things. I was the only one in my high school who was high functioning with a physical disability. People didn't really bother with me." Rather than taking steps to get to know Grace, it appeared that her peers avoided interaction and stigmatized her because of her physical difference. Similarly, Annie shared that:

A lot of my friends. . . in middle school and high school have said to me like "I would see you all the time around school, but I was always afraid to approach you," and I'm like "I'm glad we're friends now," but I wonder how many friendships I'm not having because people are afraid to approach me and say hello, and are afraid to ask questions about my blindness. So that definitely makes me sad sometimes that some people are afraid to approach me.

Although Annie forged friendships in her middle and high school years, these relationships were initially tempered by discomfort or avoidance on the part of her typically-abled peers. In line with Grace's experience, she considered the possibility that she missed out on potential friendships because her peers were hesitant to approach her and viewed her disability as a barrier to interaction.

For some participants, feelings of social isolation in college, prior to joining LEVEL, were just as prevalent. Evan, a senior at the time of this study, matricu-

lated to the university before the group's introduction. As he reflected, "coming into the university, I knew the academic load would take a little time to adjust to, but I was confident I could get through it. I was less sure of how I would make friends." Although this sentiment is likely shared by many individuals as they begin their first year of college, Evan revealed that his feelings of trepidation were compounded by his disability, as he stated that "the biggest misconception is the idea that cerebral palsy always comes with intellectual disability or cognitive delays. This effects how people, especially my peers, are willing to approach me." In line with Evan's experience, Ben found that when he did interact with others:

All people see is a wheelchair. I met some pretty cool people a couple weeks back, and this woman [said to them] "Oh aren't you guys nice?" As soon as the public sees people with a disabled person, it's like "Oh isn't it nice that they stopped and talked to the disabled person." It irks me to no end.

The idea that this group was being "nice" by taking the time to talk to Ben reinforced the ableist notion that he was less worthy of their time and any related interactions.

Jake also experienced university life before LEVEL. Like Evan, he felt confident in his ability to succeed academically, but "towards the end of freshman year into sophomore year I started feeling isolation a little more because people didn't understand what I was going through, and then LEVEL kind of came along." As he explained, connecting with peers proved initially difficult, as he felt that they did not try to understand his experience of having a disability on a university campus. Grace spoke of some of the invisible barriers that she encountered, as she acknowledged that prior to LEVEL, "I felt like people looked away or were hesitant to reach out to me, so it got difficult because some people wanted to reach out but they didn't know how."

LEVEL was established when Annie began college, which was not the case for the rest of the participants. However, her initial experiences at the university, namely the university orientation program and informal peer interactions, left her feeling isolated. As she noted:

The first semester I had a lot of trouble finding my group of friends. I did not feel that the orienta-

tion considered to my needs and my abilities. And because of that, it ostracized me from the other students, and that really shook my confidence. I was nervous about coming to college like any student is, but I was not extra nervous because of my disability. Orientation made me extra nervous because of my disability because of the way I was being perceived. Because it shook my confidence so much, I really ostracized myself more once classes started. College became something where I went to class, and I got good grades and that was the extent of it.

Thus, when LEVEL members reached out to her, Annie was resistant. In one instance, the President of LEVEL asked Annie to join her for an event. Annie reflected, “She was like, ‘Hey, do you want to walk with me?’ and I said ‘I can walk by myself,’ and I didn’t realize that she wasn’t questioning my ability, she just wanted to be a friend to me.” Annie’s experiences with social exclusion during the new student orientation program, which spanned her first four days on campus, led her to question the intentions of LEVEL. As these quotes revealed, she was not alone in her skepticism, nor was she the only participant to experience social isolation as a result of society’s widespread assumptions and misconceptions regarding disability.

LEVEL Provided a Safe Space to Dispel Ableist Assumptions and Misconceptions

While a central goal of LEVEL is to raise ableism awareness, participants noted that some members maintained ableist attitudes and misconceptions regarding their respective disabilities. Typically-abled students without prior experience with disability largely entered with misunderstandings related to their partner’s intellectual levels and their role in the relationship. Additionally, participants spoke of how it seemed that their partners were initially uncomfortable in the relationship because they were not sure how to appropriately and respectfully interact with their peers with disabilities.

Participants responded to this discomfort in a variety of ways. For Ben, this meant having to show that he is just like anyone else. As he explained, “I feel like I always have to prove something because the first thing they see is the wheelchair, but any sensible person, within ten minutes, will realize that I’m just a regular guy.” Like Ben, Evan shared:

The best way to change perspectives is to have every day interactions with people with disabilities. Whether you talk sports or work on a project, the fact that people with disabilities can have the same thoughts, feelings, and emotions that you have will open your eyes. And I think that is why LEVEL is so important.

Grace referred to the act of pushing back as “breaking [peers] of the porcelain China Doll Syndrome,” which she did by “just acting like a normal 21 year old.” When deconstructing the China Doll Syndrome, she explained:

Well, you get two types of people. The people that avoid me like the plague because they don’t know what to say or do. Or you get the people, which my mother and I affectionately term as [having] “porcelain China Doll Syndrome,” meaning that [they believe] if you touch me, I’m going to break, so they see me and they will speak to me like I’m a preschooler, and I’m 21 years old.

As a means of “breaking” her typically-abled partners of this complex, she offered:

Depending on how comfortable or uncomfortable they may seem, I will consciously put a jacket on or something like that. So that they see that I’m not going to break. Or I’ll curse, I’ll talk about all of those sorts of things, I’ll make fun of myself, anything of that realm. It depends on my comfortability with them [if I am] going to let them see the difficulty of putting a jacket on. How ready are they to break out of it that they can do this without having a panic attack? The other thing that normally breaks them out of it is when they see that I can dictate a paper without looking at it.

As these quotes revealed, LEVEL members held misconceptions about what it means to have a disability. However, participants found that LEVEL offered both a critical point of contact and a safe space to constructively push back at their typically-abled peers’ perceptions of disability.

LEVEL appeared to be unique in that it functioned as a place where typically-abled members were willing to learn about their classmates’ experiences with

disability and, in response, their peers with physical disabilities were willing to have these honest conversations. Participants also noted that they played a significant role in this process. Annie went on to explain her role in facilitating relationships within LEVEL that engendered acceptance:

I try to make people understand that it's okay to ask questions [about disability] and be curious [because] at the core of it that's what you have to do. A pamphlet can't teach you everything you need to know about it. It can give you advice and try to make you more comfortable, but the only way you're going to be able to fully understand it in the best way that you can is by talking to somebody [with a disability] because who is the best expert about disabilities? People with disabilities.

As these quotes revealed, LEVEL appeared to offer a safe, supportive environment where participants could engage in conversations that dispel ableist assumptions and allow them to feel included.

Participants did speak of the ways that feelings of inclusivity and honest conversation were not always reflected in their experiences with peers outside of LEVEL. Jake noted that acceptance "is kind of just confined to the group." Annie also highlighted this juxtaposition:

When I started on campus, people [in LEVEL] were already asking me to get lunch or do this, and it was just a really open environment. My freshman class peers were not doing that. LEVEL was just easy—it was effortless. People weren't afraid of me. People weren't afraid to know me outside of my disability. I definitely have friends outside of LEVEL, but you know, I would say for the most part, I can definitely be more accepted [in LEVEL] than I would anywhere else.

On the whole, participants found that typically-abled individuals who participated in LEVEL were more likely to view them as equals than those on campus who are not affiliated with the group. These data indicated that LEVEL members were more open and accepting than others on campus or society at large. As a result, LEVEL appeared to offer a space for participants to feel valued and socially included.

LEVEL Engendered Friendship

None of the participants spoke of encountering any difficulty with the rigor or demands of collegiate academics, though they expressed that socialization was an issue prior to joining LEVEL. Although academics and socialization are often conceived of as two distinct entities, findings revealed, in this case, that academic contact, namely through LEVEL hours, acted as a conduit for friendship. Grace noted that "some of my best friends have come through LEVEL hours," and Evan echoed that through LEVEL, he was able "to foster friendships with my peers in ways I have never before. [LEVEL hours] where you work on papers have turned into time spent hanging out with some of my greatest friends." Thus, LEVEL hours were not only helpful in a practical way, but more importantly, they often facilitated the formation of friendships.

What was perhaps most unique about LEVEL hours were that some partners who provided these hours self-identified as having a disability. Annie, who provided hours to Grace, explained that their relationship grew as a result of these consistent weekly exchanges:

And again Grace was somebody who I talked to and knew, but without doing my LEVEL hours, I know I would have not reached out to her. Just because of time and life you know? I'm so glad that LEVEL has brought us together. Even if I don't do hours with her next semester, I know that I would reach out to her because we're friends and we have a relationship. I've gotten to know her. We really benefit each other especially as women with disabilities...it's a very strong relationship that we need to have.

In this quote, Annie directly addressed the importance of her friendship with Grace, which she felt was ultimately facilitated through LEVEL hours. While the development of friendships proved important for all participants, this relationship appeared to allow Annie and Grace to support each other as women with disabilities. In addition, the act of a student with a disability providing accommodations to a peer with a disability worked to dispel stereotypes regarding ability.

Evan drew a parallel between the friendships that he formed through LEVEL and the trajectory of his college experience, as he offered, "as my social life started to get better, my outlook on my entire college experience got better." He also shed light on the ways in which LEVEL engendered these friendships:

I hang out with my LEVEL partners outside of our hours all of the time. Once we get comfortable with each other, we will often start to hang out socially. This often starts with getting a bite to eat after our hour. Many of my former or current LEVEL partners live in my building or on campus, and they will just come over to watch movies, or games, or to just hang out in my room. I go to their rooms or apartments too, and we do stuff off campus together like grab dinner or go to various events.

This quote illustrated that there was no particular magic involved in the formulation of these friendships, as they seemed to be premised on common interests and mutual affection. In line with this, Grace shared, “I have more nicknames in the LEVEL than anywhere else, but not one of them has to do with my ability level.” Like Evan, Grace felt that the friends she made through LEVEL saw her for who she was rather than focusing on her disability.

Highlighting the importance of socialization and related friendships, Ben asserted that “college is supposed to be about meeting other people and being in new situations, and LEVEL is a really big proponent of that.” Similarly, Annie contended:

The social aspect [of college] is so important. It fuels your self-esteem, it fuels your self-confidence, it fuels fun truthfully. That is key to success in college and success in life. If you can find a balance between social, academics, school work, and extracurriculars, then that’s going to benefit you for the rest of your life. It gives you the confidence to start new things. [LEVEL has also been] a support system in general...of people that understand disability or want to understand disability.

Annie both recognized the role that socialization played in her college experience and connected this to the role that LEVEL played in fostering friendships. As a result of her participation in LEVEL, she spoke of an increase in her confidence and of finding a place where she felt understood and supported.

It is interesting that Evan and Ben, two participants who matriculated to the university prior to the formation of LEVEL, reflected that they never anticipated the way that LEVEL would affect them socially. Looking back, Evan asserted “if you asked me freshman year if I would have friends from college

visit me in the summer or for Thanksgiving, I’d probably have said no. But now, I have developed lifelong friendships.” Ben also shared this sentiment, as he offered, “if you told me I [would go] to my first formal last year, I would have told you, ‘You’re absolutely nuts.’” These statements highlight the way that LEVEL informed Evan and Ben’s respective experiences and exceeded their expectations.

These findings indicate that LEVEL provided participants with the opportunity to form meaningful relationships, which was reiterated across participant interviews. It is important to note that participants were wholly capable of forming friendships both inside and outside of LEVEL; the issue was that they were often deprived of the chance to do so because of the ableist attitudes of many individuals. Since LEVEL allowed for the formation of friendships, it also appeared to offer participants a more positive college experience.

Discussion and Implications

The results of this study provide insight into ways that LEVEL affects the social experiences of five college students with disabilities. Findings reveal that participants felt misunderstood and socially isolated on the college campus prior to their matriculation into LEVEL. Upon joining LEVEL, participants felt included and were able to form meaningful relationships with same-aged peers. These findings also confirm Tinto’s (1975) theory of social integration, as they indicate that LEVEL facilitated positive socialization in myriad ways. LEVEL events and hours represent the type of semi-formal extracurricular activities that Tinto identified as critical to student retention. Furthermore, these interactions engendered key informal peer group associations, as friendships resulted from these more structured engagements.

These findings are significant in several ways. First, they highlight the social and attitudinal barriers that students with disabilities often face in post-secondary settings. In addition, they address ways in which this discrimination and related sense of isolation might be mitigated. Finally, these findings offer insight into one program aimed to create accessible social experiences for students of all abilities and educate students and the broader community about ableism. On the whole, the data revealed that this organization played a critical role in the social integration of university students with disabilities.

Several participants noted that they were initially skeptical when LEVEL was introduced on the university's campus. This seems to be, at least in part, due to their prior experiences with ableism and exclusion. They wondered if LEVEL would patronize or further stigmatize them. This presupposition aligns with research (Dovidio et al., 2011) regarding attitudes toward college students with disabilities. These studies have shown that many individuals with disabilities experienced increased avoidance by typically-abled peers and, in direct relation, decreased opportunity for socialization. Annie's negative experience with new student orientation, which was essentially her first encounter with an on-campus, semi-formal extracurricular program, confirms this line of research, as orientation did not appear to be receptive to her needs and left her feeling ostracized. Moreover, since research has indicated that most college students with physical disabilities have their services provided by the ODS (Marshak et al., 2010; Morris, 2001; Paul, 2000), it is not surprising that participants involved in this research project who entered the university prior to the implementation of LEVEL spoke of feeling socially isolated before their involvement in the organization.

It is also important to note that academic integration did not appear to pose a problem for participants. In fact, most all participants spoke of their academic competence and confidence. This data further supports Tinto's (1975, 1993) claim that "a person may perform more than adequately in the academic domain of the college and still come to leave because of insufficient integration into its social life" (Tinto, 1993, p. 107). As the data revealed, LEVEL hours expressly addressed issues of social separation. By replacing time that might have been spent with adults and/or aides with peer-to-peer contact, these LEVEL hours offered a recurring point of contact between students of all abilities. Although these hours were premised on accommodations, it appeared that they served a larger social function. In fact, all of the participants stated that the hours influenced the development of their most significant friendships. These friendships allowed them a sense of belonging, or a place where they felt valued, included, and respected. This is critical for students with disabilities, as Belch (2004) found that:

When a sense of belonging and inclusion are accomplished, a student believes there is a place for him or her. This true sense of belonging in-

vites engagement with the others in the environment in the pursuit of learning, development, and growth. (p. 9)

Participant responses echoed this statement, as they spoke of the ways that LEVEL provided them with a college experience that exceeded their initial expectations and allowed them to feel included and invested. In addition to supporting Tinto's (1993) assertion that participation in extracurricular activities often engenders friendships that transcend the formal group structure, this finding was extremely significant, as it shed light on the ways that academic encounters might also work to facilitate meaningful social interaction.

Participants recognized that LEVEL members generally engaged with the concept of disability differently than others on campus or in society at large. However, as was noted in the findings, participation in LEVEL did not eradicate all ableist attitudes or behaviors of typically-abled members. Participants noted that several of the members of this organization displayed ableist assumptions or misconceptions that were identical to the assumptions held by students outside of LEVEL. The difference appeared to be that, within LEVEL, participants felt comfortable speaking up and pushing back against these ableist attitudes when they arose, and their typically-abled peers were more willing to gain a more realistic understanding of their partners' experience with disability. As such, it appears that these hours also served an "ableism awareness" function.

Interestingly, while participants felt integrated into LEVEL, they did not always share this sentiment as related to their place in the campus at large. Data indicated that LEVEL provided a smaller group within a larger university context where students felt comfortable, safe, and supported. This type of integration facilitated feelings of social inclusion for students with disabilities (Belch, 2004; Darling, 2013). When considering participants' reactions to ableism within LEVEL, as opposed to outside of the organization, it appeared that participants' sense of integration dictated how comfortable they were in responding. Access to student organizations such as LEVEL "can help campuses feel more welcoming and provide safe places for students outside of disability services offices" (Hadley, 2011, p. 80). To this end, social integration was not necessarily universal across campus, as programs such as first year orientation left participants feeling isolated.

Since participants spoke of the difficulties they faced when socializing outside of LEVEL, future studies might investigate the accessibility and inclusivity of the programs that students encounter upon and after matriculation, such as new student orientation or residence life events. Based on the findings from this study, it would also be useful for future researchers to address the voices of typically-abled students involved in organizations such as LEVEL. In addition to providing critical insight into the ways in which participation affects their social integration, these data would also shed light on how student groups that address issues of ableism may challenge or reinforce their perceptions of disability.

From a practical standpoint, there are several important logistical questions that colleges and universities should consider if they are interested in designing and implementing a program similar to LEVEL. The first consideration pertains to the place on campus where the program will be housed. The location of the program dictates how it is overseen and maintained by faculty and/or staff as students enter into and graduate from the college or university. LEVEL is also a student-led organization. As such, students are responsible for organizing events, scheduling hours, maintaining a budget, and publicizing the organization. These students are elected onto an executive board by the larger group. It is important to think about how these students might be selected and or elected to these positions. Perhaps most importantly, this program should be driven by the interests and needs of individuals with disabilities on the college campus. Careful consideration must also be made when program leaders are seeking answers to the following questions: What are students on this campus—of all abilities—looking for from a physical, academic, and social standpoint? How might this program best function in order to facilitate the necessary changes outlined by the students and promote a “level” playing field on campus for all students?

Although the majority of research on college students with disabilities has focused on academic accommodations (Lombardi et al., 2011; Paul, 2000; Stein, 2014), social acceptance is equally critical to consider (de Boer et al., 2012; Mason, Pratt, Patel, Greydanus, & Yahya, 2004; Tinto, 1975, 1993). This research supports Tinto’s (1975, 1993) theory of college persistence by highlighting the ways in which one student organization provided a critical means of social integration for college students with phys-

ical disabilities. Additionally, this paper offers a novel way to consider what socialization can look like for this population of college students. Findings from this research have direct significance in advancing the field of disability in higher education and aiding in the design of collegiate programs and organizations that raise ableism awareness and foster social integration between students of all abilities. As this paper shows, LEVEL is a unique student organization that creates accessible social experiences for students of all abilities. It appears to bring issues of ableism awareness to light through facilitation of LEVEL hours and promotion of group and interpersonal relationships. By deliberately addressing the social integration of college students with disabilities, LEVEL offers a promising new way to think about how to meet the needs of an underserved population.

Limitations

The researchers note several limitations to this study. Since this study involved only one university, findings are likely not generalizable to all college contexts. In addition, this research is subject to key informant bias based on the number of participants. For this reason, there is no guarantee that the experiences of these students are typical (Maxwell, 2005). Transferability is also difficult in this study, as LEVEL is situated within a very specific university context. However, this research sheds light on the ways in which other students, faculty, administration, and/or institutions might make related considerations and construct programs, if they choose to create a student organization akin to LEVEL.

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Table 1

Participant Demographic Data

Name	Year	Self-Identified Sex	Self-Identified Disability
Evan	senior	male	cerebral palsy
Grace	junior	female	cerebral palsy
Ben	junior	male	cerebral palsy
Jake	junior	male	N/A
Annie	sophomore	female	blind

Differences Between Students with and without Disabilities in College Counseling

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Abstract

This study examined differences between college students with and without disabilities who utilized college counseling center services. Although we found no differences between students with ($n = 234, 9.2\%$) and without ($n = 2,308, 90.8\%$) disabilities on number of counseling sessions attended, significant findings included: students with disabilities were more likely to self-terminate and more likely to be referred out than students without disabilities. Results suggest that students with disabilities are a diverse group requiring special consideration in college counseling settings. Recommendations for college counseling practice are discussed.

Keywords: College counseling, disability, diversity, multicultural counseling

Over the past decade, college counseling centers have reported increased demand and increased symptom severity among students seeking psychological services (Locke, Bieschke, Castonguay, & Hayes, 2012). Utilization tracking and outcome evaluation have become necessary to prove the utility of college counseling centers and improve the ability of centers to serve clients (American Psychological Association [APA], 2005; Goodheart, Kazdin, & Sternberg, 2006). The International Association of Counseling Services ([IACS], 2010) standards state that “an integral responsibility of the counseling service is to conduct ongoing evaluation and accountability research, to determine effectiveness, and to improve the quality of services” (p. 5). Furthermore, ethical codes of psychology, social work, and counseling emphasize the importance of utilizing research to inform treatment (American Counseling Association, 2014; APA, 2010; National Association of Social Workers, 2008).

Researchers (Lampropoulos, Schneider, & Spengler, 2009; Romans et al., 2010) have employed a variety of methods to investigate utilization and outcomes of college counseling services; psychometrically-supported instruments including the Counseling Center

Assessment of Psychological Symptoms ([CCAPS]; Center for Collegiate Mental Health [CCMH], 2013) and the Outcome Questionnaire-45 ([OQ-45]; Lambert et al., 2006; Romans et al., 2010) are examples of objective client feedback instruments that assist in monitoring a client’s progress in treatment. Researchers (Lampropoulos et al., 2009) have also analyzed the number of attended sessions and rates of premature or self-termination (“drop-out”), which occurs when a client and counselor do not mutually agree to end counseling (Hatchett, 2004). Approximately 20-25% of the students who attend a first appointment at college counseling centers do not return (Bean, 2006) and approximately 50% of clients self-terminate (Hatchett, 2004). This is of concern, as premature termination correlates with poorer outcomes, risk of suicidality, and a potential lack of clinically significant change (Hatchett, 2004).

In addition, IACS Standards (2010) required college counseling centers to consider the needs of minority students and tailor services accordingly. Researchers (Kearney, Draper, & Barón, 2005; Levy, Thompson-Leonardelli, Smith, & Coleman, 2002) found differences between minority and non-minority

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students seeking college counseling center services. For example, Kearney et al. (2005) found that African American, Latino, and Asian American students attended fewer sessions than European American students; Levy et al. (2002) found that African American students tended to terminate counseling prematurely. Locke et al. (2012) demonstrated that racial/ethnic minority students may present in greater distress. Additionally, minority status (racial/ethnic minorities or low socio-economic status) has predicted counseling dropout (Lampropoulos et al., 2009; Owen, Imel, Adelson, & Rodolfa, 2012). Taken together, these studies indicate that monitoring of utilization and outcomes of minority students is critical in order for college counseling centers to adapt services to meet needs better.

The proportion of college students with disabilities has increased since 1990 (Sanford, Newman, Wagner, Cameto, & Knokey, 2011), possibly due to the Americans with Disabilities Act of 1990 (ADA) and Americans with Disabilities Amendments Act of 2008 (ADAA) and resulting shifts in perceptions and accessibility (Burgstahler & Cory, 2008). According to the ADA, the definition of disability is twofold: an individual must have a physical or mental impairment, and the severity of the impairment must result in a substantial limitation of one or more life functions (APA, 2012). These laws granted equal access to information and services to people with disabilities in higher education. Holicky (2003) included disability as one category of diversity requiring consideration in counseling.

A review of the literature yielded few empirical studies of psychotherapy effectiveness for adults—especially college-aged adults—with disabilities. Glickman and Pollard (2013) suggested that the lack of research may be due to the paucity of specialized professionals and financial resources, the extent to which these professionals must dedicate their time to providing services directly to individuals with disabilities, and their lack of remaining time and resources to complete quality research. Although researchers (Dorstyn, Mathias, & Denson, 2011; Idusohan-Moizer, Sawicka, Dendle, & Albany, 2015; Weiss et al., 2012) studying Attention Deficit/Hyperactivity Disorder (ADHD), intellectual disabilities, and physical disabilities found that individuals with disabilities benefit from psychotherapy, no research exists describing the experience of college students with disabilities in college counseling.

Despite supportive legislation and increased enrollment, college students with disabilities continue to face a variety of barriers and stressors. In general, students with disabilities might experience chronic stress due to discrimination; specifically, they might encounter both overt discrimination and microaggressions (Keller & Galgay, 2010), subtle discrimination based on distorted assumptions/beliefs. Researchers (Murray, Lombardi, Bender, & Gerdes, 2013; Sanford et al., 2011) found that issues of access and adjustment to university life are reflected in higher course failure rates, lower retention rates, and lower graduation rates. Furthermore, individual abilities and disabilities can provide specific barriers and needs based on the type of disability. For example, students with physical disabilities commonly face environmental and accessibility challenges across multiple realms including built environment, outdoor campus environment, social and recreational services, and technological aids (Schreuer & Sachs, 2014). Similarly, college students with visual impairments face environmental challenges including difficulties with transportation, poor access to computer-based materials, social challenges, and limited accessibility of information and communication strategies (Fichten, Asuncion, Barile, Ferraro, & Wolforth, 2009; Reed & Curtis, 2012). Students who are deaf and hard-of-hearing commonly experience difficulty in carrying full course loads and dissatisfaction with social life (Lang, 2002).

There is significant overlap in the research when discussing mental health-related disabilities. For example, ADHD may be categorized separately, as a psychiatric disability, as a learning disability, or as a “hidden disability” (Wolf, 2001, p. 387) in the literature. Estimates of the prevalence of psychiatric disabilities on college campuses are as high as 30% (Hartley, 2010), while an estimated 86% of individuals who have a psychiatric disorder withdraw from college prior to completion of their degree (Collins & Mowbray, 2005). Barriers faced by college students with psychiatric disabilities include difficulty maintaining concentration, remembering important details, screening out distractions, and meeting deadlines under pressure. Additionally, issues with test anxiety, executive functioning, managing stigma, interacting within a group, responding to negative feedback, self-esteem, and acting appropriately with classmates and faculty can impact academic performance and personal well-being (Mowbray et al., 2006). Students

with ADHD and learning disabilities (LD) tend to have lower grade point averages and more academic issues; only 28% graduate (Connor, 2012; Costello & Stone, 2012). These students may struggle due to deficits in attention, planning and organization, memory, higher order conceptual thinking, self-esteem, and social skills (Wolf, 2001). Hartley (2010) demonstrated that counseling services are an effective support for this population. A close relationship with a counselor has been found to act as an anchor, helping students with psychiatric disabilities to remain in college; retention rates for undergraduates seeing counselors were 14% higher.

As the proportion of college students with disabilities continues to increase, there is a greater need for research examining college counseling services for this minority population. In an effort to assist college counseling center professionals in improving services for students with disabilities, and to increase awareness of students with disabilities as a diverse group with unique needs, the authors of the present study sought to answer the following research questions: (1) Do significant differences exist between students with and without disabilities related to the number of counseling sessions attended, and (2) Is there a statistically significant difference in termination condition between students with or without disabilities? Based on the findings of previous studies (Kearney et al., 2005; Lampropoulos et al., 2009; Levy et al., 2002; Owen et al., 2012) which demonstrated dissimilarities between minority and non-minority students seeking counseling center services, we hypothesized that there would be significant differences between students with and without disabilities on the number of sessions attended and the termination condition.

Research Design

We based this non-experimental research study (Kerlinger & Lee, 2000) on analysis of secondary electronic medical record (EMR) data. We identified two pre-existing groups in an archived data set--individuals who self-identified as having one or more disabilities, and individuals who self-identified as not having a disability--and compared them based on termination condition and number of counseling sessions attended. We used a chi-square test for independence to make comparisons.

Hypotheses

We tested two hypotheses in this study. First, participants with disabilities would have attended a statistically significantly lower number of counseling sessions than participants without disabilities. Second, there would be a statistically significant difference in termination condition between participants with disabilities and participants without disabilities; specifically, that participants with disabilities would be more likely to self-terminate than participants without disabilities. Due to the lack of research on college students with disabilities, we based our hypotheses on the work of researchers (Lampropoulos et al., 2009; Owen et al., 2012) who have found differences between minority and non-minority students in the number of sessions attended and in the termination condition.

Method

Participants

In this study, we utilized secondary data from a sample of college students (N = 2,756) who sought services at a large, public, urban, Mid-Western college counseling center between August 2012 and August 2013. To utilize services, individuals were required to be enrolled as undergraduate or graduate students at the university. Table 1 illustrates demographic information for study participants, types of self-identified disability, as well select demographic information for overall enrollment in the university based on availability of data.

Compared with the overall university enrollment, female, African American, Asian American, Hispanic, Multi-racial, international, graduate, and disability groups were overrepresented in the study due to higher rates of presentation at the counseling center. Male, European American, and undergraduate students were underrepresented due to seeking services at slightly lower rates.

Measures

Self-report of disability status. For each participant, we categorized disability status by examining the EMR. During the intake process, students were asked to self-report disability status and type(s) of disability. No similar studies of college counseling centers were identified, thus, no precedent is established in the literature regarding how to distinguish between college students with disabilities and college students without disabilities.

Number of sessions attended. For each participant, we determined the number of individual and group counseling sessions attended via review of the EMR. We created the following categories to summarize the total number of sessions attended by participants: one kept appointment ($n = 467$, 18.4%); two or three kept appointments ($n = 629$, 24.7%); four to six kept appointments ($n = 587$, 23.1%); seven to ten kept appointments ($n = 429$, 16.9%); and 11+ kept appointments ($n = 430$, 16.9%). Modal number of appointments attended by students with and without disabilities was two-to-three appointments. These categories were selected because the average college counseling center client attends less than five counseling sessions (CCMH, 2014). In addition, we chose this method of categorization because group counseling appointments were included as part of participants' total sessions attended, and due to differences in limits for the total number of individual counseling sessions students could attend. For example, students were eligible for either 11, 21, or more sessions depending on enrollment in the student health insurance plan for the college. Lampropoulos et al. (2009) used the number of sessions attended as a means of assessing college counseling center utilization.

Reason for termination. We obtained each participant's reason for termination via EMR review. Possible categories of termination included: ongoing (counseling was not terminated and continued without interruption into the following academic year; $n = 580$, 22.8%), self-termination ($n = 1,142$, 44.9%), mutually agreed-upon client-counselor decision ($n = 277$, 10.9%), client left school due to graduation ($n = 158$, 6.2%), client left school due to dismissal or withdrew ($n = 68$, 2.7%), client left school for the summer ($n = 133$, 5.2%), client was referred outside the college counseling center for additional services ($n = 63$, 2.5%), session limit was reached ($n = 55$, 2.2%), or other ($n = 66$, 2.6%). In this study, we described premature termination using the category *self-termination*. Researchers (Hatchett, 2004; Lampropoulos et al., 2009) have utilized premature termination to evaluate counseling outcomes.

Procedure

After gaining approval from the Institutional Review Board, we analyzed records from all enrolled college students who sought services at the college counseling center during the 2012-2013 academic year. These included total number of counseling

sessions attended, reason for termination, self-identified disability or non-disability status, and disability type, as extracted from the EMR. To ensure anonymity of participants, we retained de-identified data only for analysis.

All clients during the 2012-2013 academic year were included as study participants for demographic analyses. We conducted a chi-square test for independence to examine relationships between disability status, number of kept appointments, and termination condition. We excluded participants if data were missing in any of these categories.

Analysis of Data

We performed inferential statistical analyses to evaluate differences between participants with disabilities and participants without disabilities based upon the number of counseling sessions attended ($M = 1.89$, $SD = 1.34$) and termination condition. We conducted a chi-square test for independence to examine relationships between disability status, number of kept appointments, and termination condition (Hypotheses 1 and 2).

Results

We evaluated utilization of counseling services through descriptive statistics as percentage of students self-identifying as having a disability (9.2%) and percentage of students self-identifying as not having a disability (90.8%). Hypothesis 1 stated that participants with disabilities would have attended significantly fewer counseling sessions than participants without disabilities. Chi-square test for independence revealed no statistically significant differences in total number of sessions attended based on disability status [$\chi^2(4) = 0.02$, $p = 0.84$]. Hypothesis 2 stated that there would be a significant difference in termination condition between participants with disabilities and participants without disabilities. Specifically, participants with disabilities would be more likely to self-terminate than participants without disabilities. Chi-square test for independence revealed statistically significant differences in termination condition based on disability status [$\chi^2(8) = 16.37$, $p = .04$]. Table 1 indicates percentages based on disability status in each termination condition. The effect size for this finding ($\phi = 0.1$) is small according to Cohen (1988).

Discussion

In this study, we examined differences between college students with and without disabilities who utilized college counseling center services. Students with disabilities comprised 9.2% of total students who utilized counseling center services at a large, public, urban, Mid-Western university during the 2012-2013 academic year. Participants with disabilities identified that they fit into one or more of the following categories: ADHD ($n = 88$, 36.6% of participants with disabilities), deaf or hard of hearing ($n = 7$, 3.0%), learning ($n = 24$, 10.3%), mobility ($n = 6$, 2.6%), neurological ($n = 11$, 4.7%), physical ($n = 21$, 9.0%), psychological ($n = 36$, 15.4%), visual ($n = 12$, 5.1%), or other ($n = 29$, 12.4%).

Results did not support our first hypothesis that participants with disabilities would have attended fewer counseling sessions than participants without disabilities. Therefore, regardless of ability status, university students might attend approximately the same number of counseling sessions. This result might indicate that college counseling centers are serving students with disabilities similarly to students without disabilities. Furthermore, the extent to which college counseling centers are helpful to students may not vary based on whether a student has a disability.

Researchers who have examined treatment of adults with specific disabilities (ADHD, intellectual disabilities, physical disabilities) outside of college counseling have found that individuals can benefit from short-term therapies such as cognitive-behavioral therapy ([CBT]; Dorstyn et al., 2011; Idusohan-Moizer et al., 2015; Weiss et al., 2012), which are frequently offered at college counseling centers. Results of the current study might align with this research; college students with disabilities might benefit from brief treatment in college counseling centers.

Results of this study supported our second hypothesis, that there would be statistically significant differences in termination condition between participants with disabilities and participants without disabilities. This result aligns with findings by researchers (Lampropoulos et al., 2009; Owen et al., 2012) on other minority groups, indicating that minority students were more likely to self-terminate. Despite statistically significant findings regarding differences in termination condition, the effect size in this study was small, and accounts for only 1% of the total variance in outcomes.

We found that students with disabilities were more likely to self-terminate or “drop-out” of counseling. Specifically, 49.6% of students with disabilities self-terminated, whereas only 44.5% of students without disabilities self-terminated. Because premature termination correlates with poorer outcomes, risk of suicidality, and a potential lack of clinically significant change (Hatchett, 2004), this discrepancy appears to be important. Although we found differences between students with and without disabilities, the reason these students chose self-termination is unknown.

In this study, only 6% of students with disabilities terminated counseling because of a mutual client-counselor decision, while 11.4% of students without disabilities terminated because of a mutual client-counselor decision. While the reason for these differences is unknown, students with disabilities might have stopped attending sessions due to satisfaction with services; students may have experienced reduction in symptoms. Conversely, the 5.1% discrepancy between students with disabilities and students without disabilities might indicate that students with disabilities were less satisfied with the services they received, or might have been less comfortable speaking to their counselors about issues in their treatment.

If students with disabilities did self-terminate due to dissatisfaction, several factors might affect the increased likelihood of self-termination. They might have chosen not to return because of barriers to physical space or barriers to written information. In addition, self-termination might have been indicative of issues in the therapeutic relationship; issues such as lack of agreement on how to address important aspects of counseling predict poorer outcomes (Duncan, Miller, Wampold, & Hubble, 2010). Meta-analysis suggests that the weaker the therapeutic alliance, the more likely individuals are to drop out of psychotherapy (Sharf, Primavera & Diener, 2010). In addition, counseling center staff might have engaged in inadvertent microaggressions (Keller & Galgay, 2010), subtle discrimination based on distorted assumptions/beliefs, against students with disabilities. Microaggressions may manifest in a variety of ways including counselor attitudes, language, minimization of experience, and failure to implement universal design. Additional research is required to determine the actual reasons for self-termination.

Finally, we found that counselors referred 5.1% of clients with disabilities to external sources, where-

as only 2.2% of clients without disabilities were referred. We did not, however, examine the reasons for referring clients in this study. Clients might have requested these referrals, particularly if they were hoping to see a therapist specializing in a particular population, the discrepancy might have been coincidental, or there might have been difficulty accommodating large numbers of students at the counseling center. Counselors might have determined that the needs of these students could not be served adequately within a short-term therapy model. It is also possible that counselors might have referred students to outside providers because the counselors felt unprepared or less competent at meeting the needs of this unique population. Additional study is required to determine the reasons for these discrepancies.

Limitations

Because no other studies have examined differences between college students with and without disabilities who utilized college counseling center services, conclusions based on this study are limited. In addition, the generalizability of this study might be limited because data came from only one college in one geographical location and because of the small effect size. Due to limited power, we were not able to refine results based on disability category or by other demographic factors (e.g., sexual orientation, gender). In addition, type of counseling provided (individual versus group) was not separated in this study; lack of separation might impact usefulness of this study for counseling centers. Furthermore, we explored neither student presenting concerns nor the therapeutic modality counselors utilized to treat clients in this study, which might impact results.

Self-report was relied upon to determine disability status in this study. Therefore, we could not be certain whether some students chose not to disclose disabilities, and/or whether some students had disabilities but were unaware of them. Additionally, reliance on self-report precluded the authors from discerning whether students disclosing disability status had been diagnosed by professionals. Lack of a professional diagnosis could account for the discrepancy in the number of study participants who self-identified as having a disability (234), but who were not registered with campus disability support services (179). Thus, there is potential for error in categorization of student ability status. Finally, because the term "disability" might

not be interpreted in the same manner universally, each individual might perceive and define disability differently.

Recommendations for College Counseling Practice

Increase awareness. College counselors could serve students with disabilities better by maintaining an awareness of their minority status. Understanding and acknowledging that students who identify as having a disability are a minority population on college campuses should influence and inform treatment. For example, validating students' disabilities and exploring associated strengths and challenges, being aware of microaggressions, developing therapeutic alliance, and implementation of universal design (discussed in detail in the following section) can help to establish and maintain an awareness of minority status. All college counselors must be aware that assumptions (e.g., assuming an individual does not have a disability if a disability is not visible) and microaggressions (Keller & Galgay, 2010) are examples of discrimination. As recommended by IACS (2010) standards, counselors should use ongoing evaluation of services in order to determine the specific needs of this diverse group.

Development of a positive working alliance between the counselor and client is one of the best predictors of outcome (Duncan et al, 2003). Moreover, because client ratings of therapeutic alliance have a larger impact on outcomes than counselor ratings (Duncan et al., 2010), counselors must pay particular attention to the therapeutic alliance and monitor its quality regularly (Duncan et al., 2003). This is especially important when working with minority students who are more likely to self-terminate (Sharf et al., 2010). Self-termination is correlated with lack of clinically significant change, fewer positive outcomes of therapy, and increased risk of suicide (Hatchett, 2004). Using instruments such as the Session Rating Scale Version 3 ([SRS], Duncan, et al, 2010) college counselors can monitor the quality of the working alliance on a session by session basis.

Advocate for universal design in college counseling centers. According to federal law, students with disabilities must have equal access to physical space and information, also known as universal design (Burgstahler & Cory, 2008). To provide equal access, websites, physical office space (including reception areas, waiting areas, counselor offices, and restrooms), verbal communication, and written information must be accessible to students with a variety

of disabilities. Counselors should develop increased understanding of universal design and advocate for its implementation. College counselors must recognize that failure to implement universal design, because of the relatively few students with disabilities who utilize the services, results in the microaggression of Second-Class Citizenship: denying the right to equality because it is inconvenient, expensive, and unnecessary (Keller & Galgay, 2010).

Increase multicultural training. Goad and Robertson (2000) reported that, if college counseling centers offer training related to college students with disabilities, they tend to provide this training only to students and interns. Goad and Robertson recommend that all staff receive regular training on working with this minority population, similar to the focus college counseling centers might put on racial/ethnic minority students or international students. The APA (2012) *Guidelines for Assessment of and Intervention with Persons with Disabilities*, information about universal design (Burgstahler & Cory, 2008), and education about subtle discrimination (Keller & Galgay, 2010) are examples of important training content for counselors.

Strengthen on-campus relationships. Goad and Robertson (2000) recommended creating and/or strengthening liaison relationships between college counselors and campus disability services. On-campus disability services offices are rich in knowledge about the lived experiences of college students with disabilities and can often connect counselors with resources, provide training, and respond to specific questions. College counselors can benefit from consultation with campus disability services regarding how to assist students with disabilities best. Additionally, counselors can reach the greater campus community by providing targeted outreach that models disability-affirming language and universal design. College counselors are in a unique position to advocate for students with disabilities by providing training and education to other university employees, through both formal training and informal interactions.

Suggestions for Future Research

Although results of the present study can begin to inform college counseling centers of potential differences between students with and without disabilities, additional research is required to capture the nature of this diverse group fully. Future studies could uti-

lize national and/or international samples from a variety of universities and could examine intersections of multiple minority statuses (e.g., African American students with disabilities). Larger participant pools would allow researchers to refine results by disability category and type of counseling provided (individual versus group). Future studies could consider the extent to which other client variables, such as the presenting problems of clients, might impact outcomes. The therapeutic modality counselors utilize to treat clients could also be explored to determine whether there are any differences in outcomes. Because of the link between premature termination and working alliance, future research could explore the working alliance and specific reasons for premature termination. To address the needs and challenges of counselors working with students with disabilities, future research could explore academic preparation, knowledge of lived experiences, and clinical experience with college students with disabilities.

Finally, because of the extensive gaps in the literature on college students with disabilities, qualitative studies might provide insight into experiences of students with disabilities, and those of the counselors who work with them. Additionally, qualitative research could explore any barriers to utilization of college counseling services and explore reasons for self-termination among this student population.

Summary

In this study, we examined differences between college students with and without disabilities who utilized college counseling center services. Students with disabilities comprised 9.2% of those seeking services during the 2012-2013 academic year at one college counseling center. Although we found no differences between students with and without disabilities on the number of sessions attended, we found differences in termination condition based on ability status. Specifically, students with disabilities were more likely to self-terminate and less likely to terminate counseling because of a mutually agreed-upon client-counselor decision. Finally, we found that counselors referred clients with disabilities to external therapeutic resources more often than students without disabilities. Taken together, these results suggest that students with disabilities are a unique group and require special consideration by college counseling center staff.

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Table 1

Sample Characteristics

	Sample Frequency (percent)	University Frequency (percent)
Total	2,756 (4.8)	56,387
Gender		
Male	1,690 (61.3)	29,038 (51.2)
Female	1,011(36.7)	27,349 (48.5)
Trans	14 (.5)	
No response	41 (1.5)	
Sexual Orientation		
Heterosexual	2,276 (82.6)	
Lesbian	53 (1.9)	
Gay	86 (3.1)	
Bisexual	136 (4.9)	
Questioning	44 (1.6)	
Race/Ethnicity		
African American	214 (7.8)	3,261 (5.8)
American Indian/Alaskan Native	7 (.3)	118 (.2)
Asian American	225 (8.2)	3,041 (5.4)
European American/White	1,966 (71.3)	47,120 (84.6)
Hispanic/Latino/a	101 (3.7)	1,746 (3.1)
Native Hawaiian / Pacific Islander	2 (.1)	35 (.1)
Multi-racial	95 (3.4)	1,066 (1.9)
No response	87 (3.2)	
Other	59 (2.1)	
Academic Status		
Undergraduate student	1,883 (68.3)	43,058 (75.1)
Graduate student	740 (26.9)	14,329 (24.9)
No response	133 (4.8)	
Country of Origin		
USA	2,341 (84.9)	51,359 (89.4)
International	415 (15.1)	6,028 (10.6)
Disability Status		
No disability	2,308 (90.8)	55,953 (97.5)
At least one disability	234 (9.2)	1,434 (2.5)
Registered with ODS	179 (6.5)	

Table 1, *continued*

Type of Disability	
ADHD	88 (36.6)
Deaf or hard of hearing	7 (3.0)
Learning	24 (10.3)
Mobility	6 (2.6)
Physical	21 (9.0)
Neurological	11 (4.7)
Psychological	36 (15.4)
Visual	12 (5.1)
Other	29 (12.4)

Table 2

Termination Condition by Disability Status

	No Disability (<i>n</i> = 2,308)	Disability (<i>n</i> = 234)
Ongoing	23.2%	19.2%
Self-termination	44.5%	49.6%
Mutually agreed-upon client-counselor decision	11.4%	6.0%
Left school: graduated	6.1%	7.3%
Left school: dismissed / withdrew	2.7%	2.6%
Left school: summer	5.2%	5.1%
Referred out	2.2%	5.1%
Session limit reached	2.1%	2.6%
Other	2.6%	2.6%

Note. % within Disability status

Double Time? Examining Extended Testing Time Accommodations (ETTA) in Postsecondary Settings

Laura Sokal¹
Laurie Anne Vermette²

Abstract

Over eight thousand test administrations across two universities were examined to determine whether students with disabilities were being given the necessary extended testing time accommodations and whether their use of extended time decreased over the course of their programs. Findings revealed that commonly accepted recommendations about appropriate durations of accommodations were not suitable in meeting individual students' needs and that students used more time on these types of accommodations as they moved through their first three years of their postsecondary programs. Recommendations are provided.

Keywords: Disability, accommodation, testing

The increasing number of postsecondary students with disabilities who request extended testing time accommodations (ETTA) places a spotlight on issues of fairness and validity in testing. As postsecondary institutions re-allocate resources in order to meet their legal duty to accommodate the needs of students with disabilities (Kettmann et al., 2007; Wolgast, Rader, Roche, & Thompson, 2005), questions arise about the fairness of ETTA to students with disabilities, other students, and professors, and additionally provoke questions about the suitability of timed testing per se. Although there is a high level of controversy about providing students with ETTA (Lindstrom, 2010; Sireci, Scarpati, & Li, 2005), little is known about how much time students with disabilities actually use when provided with the recommended increases of 50-100% time allotments in testing situations. The purpose of the current study was to examine the duration of time used by students provided with ETTA in course-based tests administered in postsecondary settings.

Increasing Requests for ETTA

Rothstein (2006) demonstrated that the generally accepted prevalence of learning disabilities in college populations is one in every eleven students in Australian schools, and Raue and Lewis (2011) showed that almost one third of students who attended two-year

and four-year colleges in the United States in 2008-2009 reported having learning disabilities. Furthermore, the number of students registering with their university's accessibility services in order to access accommodations is increasing (Cairns, Massfeller, & Deeth, 2010). Although many of these students qualify for and use multiple accommodations (Brinckerhoff & Banerjee, 2007), ETTA is one of most common accommodations (Sokal & Desjardins, 2016; Kim & Lee, 2015; Lindstrom, 2010; Lovett, 2010; Stretch & Osborne, 2005), if not the most common (Sireci, et al., 2005), and is usually accompanied by an accommodation where the students write the tests in quiet, separate settings (Sokal, 2016). Test accommodations are defined as altering the processes of test administration in such a way that the test can accurately measure how well the student has learned the materials taught (validity) without altering or "watering down" the construct being tested (Sireci, Li, & Scarpati, 2006). Their goal is to "level the playing field" so that the learning (knowledge, skills and abilities) of students with disabilities can be accurately measured (Sireci, et al., 2005, p. 457).

While there has been recent research conducted on university students regarding the use of test accommodations, most research on this topic pertains to children (Runyan, 1991). Thompson, Blout, and Thur-

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low (2002) published a review of 46 empirical studies related to test accommodations, and only three of the studies were conducted with postsecondary samples. Runyan (1991) presented evidence that, insofar as it pertains to meeting the testing needs of students with learning disabilities, separate research about children and adults can be generalized between these groups.

How is ETTA Used?

When ETTA is used, it is common practice to allow students either 50% or 100% more time than the standard time allocated to students without disabilities who are writing the same test (Lewandowski, Cohen, & Lovett, 2013; Lovett, 2011). Although this practice is the most common way to enact ETTA, other procedures have also been used alone or in addition to this time allocation enhancement, including rest breaks between sessions and having students write portions of the test on consecutive days. These practices have been used effectively with younger students (Elliott & Marquart, 2004).

The intuitive appeal of ETTA is not easily denied when it comes to students with disabilities. Given that specific disabilities, such as learning disabilities or anxiety disorders—now the most common category of disabilities being served by university accessibility services (AUCCCD, 2014)—are often characterized by slower processing speeds, it is common sense that a more accurate, valid picture of student learning would result from allowing these students additional test-writing time (Lovett, 2011, Stretch & Osborne, 2005; Weiler, et al., 2000). That is, ensuring that students with slower response times have the opportunity to access and process all of the test questions would seem to allow for better measurement of their actual learning as opposed to their speediness at demonstrating it. However, given that most students with disabilities use multiple accommodations concurrently, little research has been conducted about the effects of any given accommodation in isolation, making it difficult to determine how effective ETTA is at addressing the needs of specific students (Lindstrom, 2010).

Despite its widespread use, researchers have questioned the appropriateness of ETTA as a “blanket” accommodation for students with disabilities and have instead proposed that accommodations are more appropriate when they are tailored to the needs of both the student with a disability as well as the intents and design of the specific test (Brinckerhoff, Shaw, & McGuire, 1992; Lovett, 2011). Various scholars have

proposed processes to determine appropriateness of accommodations (Brinckerhoff, et al., 1992), as the same accommodation may affect students within the same categories of disability differently (Lindstrom, 2010; Medina, 2000), and while “certain testing accommodations may benefit some students with learning disabilities, no single accommodation has been shown to benefit all students with learning disabilities” (Brinckerhoff & Banerjee, 2007, p. 247). This statement takes on even greater meaning when the diversity of disabilities addressed through universities’ student accessibility services is considered.

So, why then is the use of ETTA so prevalent? Research has shown that many students with disabilities, both in grade school and university, view ETTA as an effective way to meet their learning needs (Sokal, 2016; Sokal & Desjardins, 2016; Elliott & Marquart, 2004). University accessibility services are finding that their students’ needs exceed their offices’ resources and that providing ETTA satisfies both their students’ wishes and their own duty to accommodate in a time-effective way (Sokal, 2016; Lovett, 2011). The most cost-effective accommodation options that meet students’ immediate needs may be selected ahead of one-on-one counseling on test-writing skills, and other accommodations that are more expensive or intensive for accessibility service providers (Brinckerhoff, et al., 1992). As such, ETTA has now become the default accommodation in many cases.

Theoretical Basis for ETTA

The intuitive appeal of using ETTA is bolstered by strong theoretical support. For the purposes of clarity, we will make reference to the *Interaction Hypothesis* (see Sireci, et al., 2005), also called the *Accommodation-Disability Interaction Paradigm* (Elliott & Marquart, 2004) or the *Maximum Potential Thesis* (Zuriff, 2000), and contrast it with the *Differential Boost Theory* (Fuchs & Fuchs, 2001). In essence, the interaction hypothesis proposed that providing additional time should result in higher performance in students with disabilities but should not result in higher test scores in students without disabilities. The hypothesis is based on the premise that students without disabilities are able to complete the test when working to their maximum potential under timed testing situations and that well-designed tests therefore provide a reliable, valid measure of their learning of the content materials. Students with disabilities, however, are at a disadvantage, as slower processing times result in

them running out of time before they complete the test (Cahalan-Laitusis, Morgan, Bridgeman, Zanna, & Stone, 2007). In these instances, the well-designed test is not an accurate and valid measure of their learning but instead a measure of their speediness in accessing knowledge. Without having the time to access and attempt all of the test questions, students are denied the opportunity to fully demonstrate their learning. Therefore, according to the interaction hypothesis, the provision of extra time to students with disabilities allows a more valid and accurate measure of their learning, but should not affect the scores of students without disabilities in the same way.

The differential boost theory is similar in many aspects, yet it differs in one important way. The differential boost theory (Fuchs & Fuchs, 2001) also proposed that extended time will enhance performance on tests for students with disabilities, but does not require that there are no similar positive effects on students without disabilities. The important distinction in this theory is that the gains made by the students with disabilities must be *significantly greater* than the gains made by the students without disabilities, hence the “differential boost” to the students with disabilities. In this way, the differential boost to the achievement of students with disabilities when ET TA is provided suggests that this accommodation is an appropriate response to the student’s specific disability.

There are other theories from the field of psychology that inform understanding of why ET TA may or may not result in higher test scores in students with disabilities. *Social Learning theory* (Bandura, 1991) proposed that people’s perceived efficacy in a given situation will affect their functioning. Accordingly, Elliott and Marquart (2004) proposed that students may process being provided with ET TA in one of two ways. First, the students may be motivated by increased self-efficacy, as they perceive that the test is now achievable with the ET TA provided (Sokal & Desjardins, 2016). In addition, the extra testing time may result in lower levels of anxiety and therefore allow the students to focus more effectively on completing the test (Perlman, Borger, Collins, Elenbogen, & Wood, 1996). This possibility is noteworthy, as anxiety disorders have now surpassed depression as the most common disability in the general population, as well as in postsecondary populations (AUCCCD, 2014), and are often comorbid with other disabilities, suggesting that processes that address anxiety in testing situations would have broad application. An

alternative psychological student response to being provided with ET TA is that the students may perceive the accommodation as a validation of their lower skill level, and ET TA may therefore inhibit self-perceptions of efficacy in testing situations (Elliott, Ysseldyke, Thurlow, & Erickson, 1998).

Literature Supporting and Refuting the Theoretical Basis of ET TA

As the use of high-stakes testing has grown, so has the study of how ET TA effects both the testing processes and the use of the results. Copious research has examined the interaction hypothesis to determine whether it stands up in various situations. Sireci et al. (2005) completed the most influential and recent examination. These researchers found that, based on a review of over 40 empirical studies, the hypothesis was partially supported. In most studies they examined, students with disabilities performed better when they were allotted more time than when they were not. In many of the studies they reviewed, however, it was shown that students without disabilities also performed better on tests with extended time. Thus, Sireci, et al. (2005) proposed a modification to the interaction hypotheses that, in effect, validated the differential boost theory: in ET TA situations, the scores of students with disabilities should be significantly greater when the students are provided with ET TA than when they are not, and gains made by students with disabilities should be significantly greater than those made by students without disabilities in ET TA settings.

Interpretation of Increased Gains for All Students Using ET TA

In framing this modification to the interaction theory, Sireci, et al. (2005) argued that the findings indicating that all students benefited from extended test time did not mean that ET TA is unfair. That is, it is not the case that ET TA is necessarily unfair when all students make gains, rather ET TA is viewed as unfair when all the students make *similar* gains. Fuchs and Fuchs (2001) clarified this position:

When accommodations increase scores for students with learning disabilities no more than is expected for non-disabled students, then we might conclude that the test accommodation does not speak to the nature of the student’s disabilities in any essential way. On that basis, we may also infer that the accommodation is not fair. (p. 176)

Other research has refuted that the intent of the modified interaction hypothesis and differential boost theory are accomplished through the use of ETTA. Recent research by Lewandowski, Lovett, and Rogers (2008), and Lewandowski, Lovett, Parolin, Gordon, and Coddling (2007) showed that extended time provided even greater advantage to students without disabilities than it did to students with attention deficit hyperactivity disorder (ADHD) or reading disabilities. Likewise, Fuchs and Fuchs (2001) demonstrated that ETTA sometimes fails to result in better performance in students either with or without disabilities. Of the seven studies about ETTA that Thompson et al. (2002) reviewed, four showed positive effects of ETTA and three showed no effects of ETTA, again suggesting that the appropriateness of using ETTA to address students' testing needs is as yet inconclusive. However, even in studies that showed no *overall* differential boost favoring either students with disabilities or those without, there were still a minority of students with disabilities who demonstrated differential boosts: Fuchs and Fuchs (2001) showed that 23% of students with disabilities benefitted substantially more from ETTA than students without disabilities when extended time was provided on math and reading tests where no *overall* differential boost between groups was demonstrated. Medina (2000) had similar findings with the university students she studied using both course-based and standardized assessments. These findings suggest that attention must be paid to individual learning needs and accommodations, as opposed to group or standard practices of accommodation (Fuchs, Fuchs, & Capizzi, 2005). Considered together, the current research literature demonstrates that there is no consensus on the accuracy of the interaction hypothesis (Sireci, et al., 2005), nor on the differential boost theory (Fuchs & Fuchs, 2001), as they relate to ETTA and its effects on learners in groups or on individuals.

Other research gives some support to Bandura's social learning and self-efficacy theories as a means of understanding how ETTA may affect student performance. In addition to the cognitive benefits of providing opportunities for students with slower processing speeds to access more of the test content through ETTA, research with middle school children demonstrates that there are also potential psychological processes at work. Elliott and Marquart (2004) found that grade eight students with disabilities felt less frustrated, more relaxed, and more motivated

than typical students or students "at risk" when all three groups were given ETTA. This finding is interesting in that the students with disabilities did not demonstrate a differential boost in their achievement when compared with the other groups in this study, but still experienced better affective outcomes (relaxation, motivation, less stress) in the ETTA condition. Research with university students with anxiety disorders (Sokal & Desjardins, 2016) found that students who were provided with ETTA felt calmer, and during testing time experienced fewer of the gastrointestinal problems that are often associated with high-stress events.

Criticisms Related to Fairness

Given the lack of consensus on whether providing ETTA results in a differential boost for students with disabilities, and also controversy on how to interpret the finding that other students sometimes also perform better when extra time is given to them in testing situations, it is not surprising that the use of ETTA as a common testing accommodation has been widely questioned and criticized. The arguments tend to fall into four categories: (1) unfairness to students without disabilities; (2) unfairness to students with disabilities; (3) unfairness to professors; and, (4) unfairness to pedagogical development.

Unfairness to students without disabilities. The finding that all students benefit from additional test time has been used to argue that providing ETTA only to students with disabilities gives them an unfair advantage over students in the same testing situation who are not given extra time (Lovett, 2011; Sireci, et al., 2006; Sireci, et al., 2005). Indeed, the burgeoning requests for ETTA on the Scholastic Aptitude Test (SAT) administration have resulted in more stringent documentation requirements and more students being denied accommodation (Moore, 2010), suggesting that this question of providing unfair advantage to students with disabilities is especially salient in high-stakes tests (Brinckerhoff & Banerjee, 2007).

Unfairness to students with disabilities. Unfairness to students with disabilities is claimed in two different ways. First, when ETTA is *not* provided, students perceive that they are being disadvantaged by their institution's reluctance to meet its legal obligations to accommodate:

When students with learning disabilities tell us that some instructors engage in non-accommodation,

there is an obvious challenge.... Denial of the existence of the learning disabilities or denying accommodation likely contributes to instructional and institutional environments that delay students' graduation, limit their academic success, and ultimately undermine their ability to use higher education as a stepping stone towards meaningful life goals. (Quinlan, Bates, & Angell, 2012, p. 230)

The corollary is that these needs are met when ET TA is provided. Sireci, et al. (2006) indicated that, "students with...disabilities demonstrate their true abilities more clearly when they are allowed accommodations" (p. 3). Lin (2010) therefore argued that accommodations increase test validity in that they allow students to demonstrate their skills and abilities in situations where standard testing procedures would prevent it.

Second, some critics view accommodations such as ET TA as a failure to meet individual student's needs in meaningful ways. ET TA, in particular, is viewed as a cost-effective, blanket accommodation that releases institutions from investigating student-specific, more suitable accommodations. According to Brinckerhoff, et al. (1992), it is essential that accommodations are developed in order to meet the learning needs of a specific student, rather than providing common accommodations to all students who identify with disabilities. Lovett (2011) argued that "easy fixes" such as ET TA take attention away from interventions that have been shown to increase student agency and decrease their dependence on accommodations, such as test-taking strategies and stress-reductions practices. "Accommodations are overly tempting," he said, "because they are easier than interventions" (p.2). Critics of ET TA suggest that students who are provided with these sorts of accommodations can become overly dependent on them and find that similar accommodations are not as readily available in work situations. Thus, these students enter the workforce less prepared than other students (Brinckerhoff, et al., 1992).

Unfairness to professors. Likewise, arguments that ET TA is unfair to professors follow two pathways. First, research shows that there are times when ET TA is inappropriate, such as in situations where speediness is a construct being evaluated (Brinckerhoff & Banerjee, 2007; Lovett, 2010; Phillips, 2002). When professors are told that they must provide ET TA to students, it can sometimes create a situation where the capability of the test to measure the con-

struct under examination is compromised. Although a primary role of the professoriate is to work with accessibility services to ensure that both the fidelity of the test and the fairness to the student are maintained (Brinckerhoff, et al., 1992), professors are not always given this opportunity to collaborate but rather are simply instructed to provide ET TA (Sokal, 2016). Author showed that many professors question the use of ET TA privately, but simply comply when asked to provide it. Even when professors agree with the use of ET TA, Stretch and Osborne (2005) suggest that instructors who are not familiar with how validity is affected by ET TA may introduce error into the test process that in turn limits the use of the testing results.

The second way that ET TA is perceived to create unfairness to professors relates to their impression of the perceptions of students without disabilities. Research (Sokal, 2016; Bruder & Magro-Wilson, 2010; Izzo, Hertzfeld, Simmons-Reed, & Aaron, 2001) has shown that professors are very concerned, especially in competitive programs, that other students will perceive the accommodations provided to some students and not to others as unfair. While confidentiality prohibits professors from explaining why specific students are provided with longer test times, these professors, nonetheless, remain concerned that the other students will see them as giving some students an unfair advantage (Sokal, 2016).

Unfairness to pedagogical development. The last way that ET TA is perceived as unfair is that by accepting that some students need accommodations in order to provide valid test results, the professoriate is diverted from an examination of timed testing procedures per se. That is, in many tests, speediness is a factor that affects the students' performance. Yet, in very few situations is the intended construct being measured actually speediness. Considering the many ways to assess student learning as well as the limitations of testing, it seems counter intuitive that timed tests have become the default method in measuring student learning. Stretch and Osborne (2005) therefore suggested that timed tests should be a rare exception when choosing assessment practices. These authors, as well as Elliott, Braden, and White (2001), posited that using untimed testing is a more logical and less problematic choice, while at the same time recognizing that giving a prescribed time for a test provides a logistical scheduling benefit to schools.

How Much Time is “Reasonable?”

If the advice of Stretch and Osborne (2005) and Elliott, et al. (2001) were taken, the practical question would arise regarding how long an untimed test would typically take. As seen previously, it is common practice to allow students either 50% more time or 100% more time than the standard time allocated to students without disabilities who are writing the same test, a practice recommended by Ofiesh and Hughes (2002). It should be noted that Ofiesh and Hughes’ recommendation was generated from an analysis of only seven quasi-experimental studies where the duration of time used by students with disabilities writing almost exclusively standardized tests under ETТА conditions were reported. Furthermore, these studies did not focus on the question of how much time was appropriate, but serendipitously reported these times as part of the data collected while examining other factors. In six of the studies, the students were given unlimited time to finish the tests and told that their time would be recorded, a design feature that Ofiesh and Hughes posited may have inflated the total time used. It is noteworthy that no empirical evidence exists to support these practices as *recommendations* for effective ETТА durations (Lewandowski, et al., 2013; Lovett, 2011), and the research literature, with a few exceptions such as Ofiesh and Hughes’ work, is “silent on this issue” of what appropriate time allowances should be (Lewandowski, et al., 2013; Stretch & Osborne, 2005).

Some research has suggested that Ofiesh and Hughes’ (2002) recommended allowances are far too generous. Cahalan-Laitusis, King, Cline, and Bridgeman (2006) posited that 25% more time is a more suitable allotment. These authors found that students with disabilities who were writing their SATs in untimed conditions needed only 8% to 14% more time in order to access the same number of questions as their peers without disabilities. Furthermore, Brooks, Case, and Young (2003) found that giving students with disabilities excessive time allotments did not result in higher test scores. Cahalan-Laitusis, et al.’s (2006) recommendations are bolstered by dated, yet relevant, research by Perlman et al. (1996) who found that most students provided with ETТА did not use all the additional time they were allocated. This finding was further supported by the perception of university students in a recent study by Author (in press a), and was also demonstrated by high school students in a study by Cahalan-Laitusis, et al. (2006).

It is therefore a challenge to determine a reasonable amount of time to allow when ETТА is used, being as there are no established processes to determine this answer. The Cahalan-Laitusis, et al. (2006) study showed that students with disabilities needed no extra time on some types of test questions but needed a small amount (4-18% more per section) on other types of questions, suggesting that the test design may also affect the appropriateness of time allotted (Ofiesh & Hughes, 2002). Research studies about the use of accommodations have further suffered from small sample sizes (Thompson et al., 2002). Moreover, research designs investigating this question have mainly been restricted to the study of the effects of ETТА on high-stakes tests such as SAT (Elliott & Marquart, 2004; Ofiesh & Hughes, 2002) in experimental settings, thus limiting what we know about the ETТА time used in day-to-day situations of students with disabilities writing real, course-based tests. Cahalan-Laitusis, et al. (2006) therefore have recommended “Future research may wish to examine time used by students with... disabilities during an operational administration” (p. 12). The purpose of the current study was to examine the duration of time used by students provided with ETТА Spin course-based tests administered in postsecondary settings. Specific research questions included:

1. Do students with disabilities who write their tests with ETТА use their full allotted time; and
2. Do students use longer durations of additional testing time relative to the maximum time provided to students without ETТА in lower level than in higher level courses?

Methods

Population

The data used in this study were taken from secondary data sets accessed through the student accessibility service offices at two mid-western, Canadian universities. Given that student records related to disabilities are protected under the Freedom of Information and Protection of Privacy Act (FIPPA), all identifying information was removed from the data before it was accessed by the researchers. Thus, it is impossible to report on the demographic information of the specific students whose testing data we accessed. However, general information about each university

can be used as a proxy to likely describe the representative participants. The smaller university offered mainly undergraduate programs, while the larger university provided undergraduate, graduate, and professional programs. While both universities provided data regarding the diversity of their students, the larger university published reports about the use of its services, and therefore those data regarding the students registered with Student Accessibility Services (SAS) during the study years were available to the researchers and are provided in Table 1.

Design

The current research study entailed a post-hoc analysis of data provided on exams written with ETТА by students registered with accessibility services. The exams were written during the years 2013-2014 and 2014-2015. After removing cases where no ETТА was provided and where students failed to report to the testing location, data from 2,414 exams were used from the smaller university and 6,443 exams were used from the larger university. After consulting with and obtaining the agreement of the coordinator of student accessibility services at each university, and obtaining approval of the representative research ethics boards, data were provided by both universities including: (1) year in the program to which each exam applied; (2) the standard exam time; (3) accommodated exam time under ETТА; (4) the time actually used to write the exam.

Findings

Given Aud et al.'s (2013) caution that contextual factors specific to individual settings recommend against collapsing data sets across settings, we began our analysis by examining each data set separately.

Descriptive Statistics

At the smaller university, 1,235 tests were analyzed from the 2013-2014 school year, and 1,179 tests were analyzed from the following year, for a total of 2,414 tests. At the larger university, 2,989 tests were analyzed from 2013-2014 and 3,454 tests were analyzed from the subsequent school year, comprising 6,443 tests in total from the larger university, and 8,857 tests in all. Given the differences in programming and graduate level courses offered at each university, the distribution of the level of each exam--corresponding to the year of the course in the program are--presented separately by university in Table 2.

Comparisons Between Universities

Three time durations were reported for each case by SAS. Table 3 reports the descriptive statistics of these data from each university: (1) The *Standard* test duration is the maximum duration of time in minutes provided to all members of the class who did not have ETТА provided; (2) The *ETТА* test duration is the maximum duration of time in minutes provided to a specific student writing that same test with ETТА; (3) The *Used* test duration is the actual duration of time in minutes used by a specific student writing that same test with ETТА.

Three additional variables were computed and reported in Table 4. The *ETТА/Standard score* (E/S score) represents the ETТА test duration divided by the Standard test duration, indicating the relationship between the time provided to the specific students under ETТА and to the other students without ETТА. For example, if the E/S score was 1.5, a particular student in the sample was given 1.5 times the duration of time provided to the students who did not qualify for ETТА on that particular test. The second computed variable was the *Used/Standard score* (U/S score) and represents the actual test duration used divided by the Standard test duration, indicating the relationship between the time used by the specific student under ETТА and the time maximum provided to other students without ETТА. For example, if the U/S score were 2, the student used double the duration of time provided to the students who did not qualify for ETТА on that particular test. The third variable computed was the *Used/ETТА score* (U/E score), and was derived from dividing the students' actual time used to complete the test by the maximum durations that were allowed under ETТА. Thus, if a student's U/E score was .5, it would indicate that the student completed the test in 50% of the time allotted under ETТА.

Although the values presented in Tables 3 and 4 appeared strikingly similar between the universities, a MANOVA was conducted with each of the six scores as dependent variables and the university as the independent variable. Results indicated that there were no significant differences between the universities in terms on the standard test durations provided, [$f(1, 8,856)=1.25, p=.26$] and the Used/Standard score [$f(1, 8,856)=2.95, p=.09$]. However, significant differences emerged between the two universities' samples in terms of ETТА provided [$f(1, 8,856)=8.38, p=.01$], the actual Used minutes [$f(1, 8,856)=7.89, p=.01$], the ETТА/Standard score [$f(1, 8,856)=3.00, p$

$\leq .001$], and the Used/ETTA score [$f(1, 8,856)=29.68$, $p \leq .001$]. Examination of the means previously presented indicated that the students at the smaller university were provided with an average of five extra minutes on exams under ETTA. In contrast, students at the larger university used an average 5 more minutes to complete their tests. In terms of the relationships between the ETTA durations compared to the standard test times at each university, the smaller university allowed on average an additional 62% of the standard test time while the larger university offered an additional 58% of the standard time. Finally, while the ETTA accommodations were slightly more generous at the smaller university, these students used only 72% of the ETTA allowance on average, compared with the students at the larger university who used an average of 75% of their ETTA.

Once it was established that the mean duration of Used/ETTA was .75 of the maximum for the larger university and .72 of the maximum for the smaller university, it was clear that the first research question was answered: Many students with disabilities who write their tests with ETTA do not use the full allotted time. We conducted follow-up analyses to tease out intricacies within this finding. First, through analysis of the Used/Standard data frequencies, we determined how much, if any, of the standard time was used by students who were provided with ETTA and reported the findings in Table 5. We chose to use the Used/Standard variable because it was not significantly different between the two universities and therefore allowed us to examine the large data set as one.

In order to investigate whether the ETTA times provided followed these trends, we used similar frequency analysis on the ETTA/Standard scores and reported the findings in Table 6. However, being as the ETTA/Standard scores were significantly different between the universities, we examined and have presented each university's frequencies separately.

We then turned our attention to the second research question: Do students use longer durations of testing time relative to the maximum time provided to students without ETTA in lower level than in higher level courses? In order to investigate this question, we had originally planned to use an ANOVA. However, Levene's Statistic indicated that the variances within the exam levels were not homogeneous [$F(5, 8,774)=3.3$, $p = .01$], even when we collapsed the graduate level courses from years five to nine where cell sizes were comparatively smaller (see Table 2).

As a result, we chose to conduct a Kruskal-Wallis test, because it is recommended as an alternative to ANOVA procedures in cases with non-parametric variances (Lund Research, 2013a). Furthermore, the data satisfied the four assumptions of using this test: (1) the dependent variable was continuous; (2) the distribution of the data was not normal; (3) each case (i.e. exam) was represented in only one group; and (4) the groups of two or more were categorical and independent (Lund Research, 2013a). We maintained the collapsed category five, which represented graduate level courses, and therefore we examined exams across five categories (first year, second year, third year, fourth year, and fifth the ninth year). The Used/Standard score was used as the independent variable because this variable was not significantly different between the universities. The results indicated that there were significant differences between the Use/Standard scores of exams written at different course levels, $H(4)=128.25$, $p \leq .001$, with mean ranks of 4,058.32 for first year exams, 4,386.81 for second year exams, 4,741.41 for third year exams, 4,885.45 for fourth year exams, and 5,658.38 for exams from years five to nine. Follow-up Mann-Whitney tests were chosen to determine where the significant differences could be found, being as they are recommended as alternatives to t-tests when non-parametric groups are present and also because our data met the four assumption of using this test (Lund Research, 2013b). Results indicated that the mean rank was significantly higher in second-year tests than in first-year tests ($U= 4,940,345.50$, $p \leq .001$) and was also significantly higher in third-year tests than in second-year tests ($U= 2,028,565.00$, $p \leq .001$). The mean ranks were not significantly different between tests from year 3 and 4 ($U= 425,397.00$, $p = .21$) or between years 4 and 5 ($U= 304$, $p = .23$). Our second question was therefore answered, as students actually used increasingly more testing time relative to the maximum standard test time in third than first level courses. While this escalation stopped between year three and year four testing levels, it did not decrease.

Discussion and Implications

The findings of the current research contribute to the understanding of how ETTA is enacted in two universities of different sizes. Taking the advice of Aud et al. (2013), the two schools were initially examined separately, despite the impression that the data from

both universities appeared quite similar. Indeed, the average standard testing time, the average ETTA duration provided, and the average actual testing time used differed only five minutes or less across universities. However, when analyses were conducted on these variables as well as those derived from them (ETTA/Standard score, Used/Standard Score, and Used/ETTA score), significant differences emerged.

Three of the findings of the current study will be examined in greater depth in order to inform processes for supporting students who request ETTA. First, it is noteworthy that many students complete testing with only a small proportion of additional time compared to the standard. Of the sample of 8,857 exams, it was found that in 3,059 (35.5%) of exams, students did not use any ETTA, while in 5,798 (64.5%) exams, students used at least some of it. These findings support those of Cahalan-Laitusis et al. (2006), who conducted their research with high school students and showed that 8-14% additional time is usually sufficient for ETTA. They therefore recommended that the standard ETTA be set at 125% of the standard test time. Likewise, our data showed that while over 55% of the students complete their tests with an addition of 25% of the standard time or less (see Table 5), only 1.8% of students at the smaller university and 8.7% of students at the larger university were limited to this duration (see Table 6). Furthermore, 85% of students completed their tests with an additional 50% of the standard time or less (see Table 5), yet only 58% at the smaller university and 70.5% at the larger university were limited to this ETTA duration (see Table 6).

The second trend to be highlighted is that students used more ETTA as they moved through their first three years of university. It may be that these findings speak to the commensurate challenge level of increasing course levels, or it may be that students are failing to develop other strategies that allow them to either maintain or decrease their ETTA used.

The third trend is that the ETTA provided at both universities clusters around the time points recommended by Ofiesh and Hughes (2002). It is noteworthy that there is a clustering of scores at both universities within the range that includes 1.5 times the standard test time and a second cluster at the 2 times the standard testing time range at the larger university only. This finding suggests that some ETTA providers may have accepted the recommendations of Ofiesh and Hughes (2002) without examining their very weakly supported research origins.

Conclusions and Recommendations

Based on these three trends, it would seem logical to recommend that students be provided with both shorter ETTA as well as more supports for developing other strategies to use less ETTA as they progress throughout their studies. However, a blanket recommendation such as that suffers from the same limitation as those of Ofiesh and Hughes (2002) in that it ignores individual differences.

While increasingly tight university budgets make a “one-size-fits-all” approach to meeting students testing accommodation needs more attractive and while the current findings show that students rarely use more than 25% additional time when compared to the standard test times, therefore creating a temptation to endorse blanket decreases in ETTA, abruptly reducing ETTA would be a mistake. ETTA in many ways can be compared to home insurance or health insurance: Just because one does not use it does not mean that one does need it. Other research has shown that just the presence of the extra time is enough to decrease student stress so that they do not use the extra time allowed on a test (Sokal & Desjardins, 2016). For this reason, caution against drastically reducing ETTA even in the situations where it is not used is advisable. Students should be given the opportunity to gradually decrease their ETTA use in situations where that is possible and should be active agents in the goal-setting and discussions that lead to decisions about ETTA durations.

Furthermore, individual differences must be considered when setting goals around reduced ETTA. For example, it is possible that a student who experiences test anxiety may learn additional coping strategies and therefore use less ETTA over time. However, it is unlikely that a student who has permanent language production difficulties and uses a scribe will show the same trends. Indeed, although the frequency of students requiring more than twice the standard test time are rare, these students are present in our university populations and have equal rights to appropriate accommodations. Individual needs and capacities must be considered both in setting ETTA and considering whether reducing ETTA is a reasonable accommodation.

How then can the approach to ETTA honor individual differences and capacity at the same time as it fosters learner growth? Similar to school systems that require students with disabilities to have annual individual educational plans, universities are advised to meet annually with students to review progress including the students' Used/Standard scores and their

ETTA allowances. If students are given information about their own trends in use of ETTA, they will be able to set more accurate goals for their futures. This approach not only recognizes the efficacy needs of adult students (Bandura, 1997) but also fosters self-determination (Getzel, 2008), a main predictor of student success. Self-determination was described by Getzel as “acceptance of a disability and how it affects learning; understanding which support services are needed; knowing how to describe one’s disability and the need for certain supports to service providers; and having the determination to overcome obstacles that may be presented” (p. 210). In addition, Getzel showed that student skills such as organizational skills, time management, goal setting skills, and an awareness of how technology can support their learning were predictive of success in students with disabilities. Of course, the goals set by students would need to be accompanied by supports from the universities such as those mentioned by Getzel as well as self-regulation strategies, stress reduction, test-taking strategies, and the like. In this way, students are supported to become self-determined, active agents in planning and enacting their growth and independence as students.

All research presents limitations, and the current project is no exception. The first limitation relates to the data set. Due to privacy laws, the data were cleaned of information about specific students and their disabilities before being provided to the researchers. If provided with this information and also provided with information about the same students’ Used/Standard scores over time, it would be possible to make more specific recommendations about which students would benefit most from gradual decreases in ETTA accompanied by other skill training and which students would not. Kim and Lee (2015) showed that the influence of testing accommodations varies by disability, and having access to these data about the specific disabilities in the current study’s sample would have allowed a more nuanced analysis. The second limitation is that the recommendations generated here infer allocation of funding in order to create individualized plans for each student. The limitation to this recommendation is the will of the policy-makers and university administrators who allocate budget dollars.

Overall, the current research findings suggest that adhering to allotments of 50-100% ETTA, while cost-effective and easily administered, is unsupported

by research evidence and is insensitive to individual learning needs. Rather than focusing on the short-term, time-efficient means of providing accommodation through ETTA alone, we suggest that universities pay more attention to both the individual needs of students in testing situations as well as to goal setting and supports that foster greater learning independence whenever possible.

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Table 1

Description of Students at Participating Universities

Variable	Year	Smaller University	Larger University
Students Registered	2013	10,096	29,759
	2014	9,842	29,657
International Students	2013	5.5%	13%
	2014	6%	13.2%
Indigenous Students	2013	7.8%	7%
	2014	8.2%	7.2%
Female Students	2013	62%	53%
	2014	62%	53%
Students Registered with SAS	2013		1047
	2014		1,100
Mental Health Disabilities	2013		36%
	2014		37%
Learning Disabilities	2013		19%
	2014		19%
Physical Disabilities	2013		4%
	2014		4%
Deaf or Hard of Hearing	2013		4%
	2014		4%
Temporary Disabilities	2013		4%
	2014		2%
Blind	2013		4%
	2014		2%
Unclassified	2013		5%
	2014		8%
Multiple Disabilities	2013		15%
	2014		Data Unavailable

Table 2

Test Distribution by Level for the Smaller and Larger University

	Smaller University	Larger University
Level (Year in Program)		
0	34	39
1	921	26
2	980	1,983
3	319	1,170
4	4	508
5	2	0
6	0	14
7	0	24
8	0	4
9	0	15
Continuing Education	60	
Undisclosed	16	
Missing	1	

Table 3

Durations in Minutes by University

Interval Name	University	Mean	SD
Standard Time	Small	113.20	54.60
	Large	111.85	48.78
ETTA Time	Small	180.98**	87.75
	Large	175.32**	79.56
Used Time	Small	125.17**	72.23
	Large	130.02**	72.43

Note. ** indicates $p = .01$.

Table 4

ETTA/Standard, Used/Standard, and Used/ETTA scores by University

Interval Name	University	Mean	SD
ETTA/Standard Score	Smaller	1.62**	.27
	Larger	1.58**	.26
Used/Standard Score	Smaller	1.16	.43
	Larger	1.18	.41
Used/ETTA Score	Smaller	.72**	.24
	Larger	.75**	.23

Note. ** indicates $p = .01$.

Table 5

Used/Standard Score Ranges

Range	Frequency	Percentage	Cumulative Percentage
0.00-1.00	3,059	35.5	35.5
1.01-1.25	1,170	19.2	55.2
1.26-1.50	2,609	29.5	85.5
1.51-1.75	660	7.5	93.1
1.76-2.00	517	5.8	99.1
2.01-2.25	54	.6	99.8
2.26-2.50	11	.1	99.9
2.5+	10	.1	100.00

Table 6

ETTA/Standard Score Ranges

Range	Frequency	Percentage	Cumulative Percentage
	Small/Large	Small/Large	Small/Large
0.00-1.00	0	0	0
1.01-1.25	43/534	1.8/8.7	1.8/8.7
1.26-1.50	1,354/3,810	56.2/61.8	58.0/70.5
1.51-1.75	516/594	21.4/9.6	79.4/80.1
1.76-2.00	436/1,169	18.1/19	97.5/99.0
2.01-2.25	19/31	08./0.5	98.3/99.5
2.26-2.50	23/14	1.0/0.2	99.2/99.8
2.5+	19/14	.8/2	100.0/100.0

Promoting Positive Transition Outcomes: Effective Planning for Deaf and Hard of Hearing Young Adults (Book Review)

Pamela Luft

Washington, DC: Gallaudet University Press, 2016
320 pages, \$75 (Paperback)

Reviewed by Bentley Fink¹

Providing effective transition services and attaining positive outcomes for Deaf and Hard of Hearing (DHH) youth has never been an easy endeavor. Disability education law and policy, such as the IDEA and PL 94-142, guide the education and transition endeavors of DHH children with an eye on improving postsecondary transition outcomes. Yet, educational and employment outcomes for the DHH have consistently shown that DHH youth face barriers that continue to exist even with current supports (Punch, 2016). Because the DHH population is both a low incidence and linguistically diverse population, providing transition services to DHH youth presents a myriad of challenges, particularly for those unfamiliar with working with DHH youth.

Dr. Pamela Luft from Kent State University wrote *Promoting Positive Transition Outcomes: Effective Planning for Deaf and Hard of Hearing Young Adults*. Totalling 249 pages not including references, Luft explores the genesis and evolution of transition services through legislation, the state of transition services today, and issues that continue to serve as barriers. Following this, Luft introduces strategies and tools for professionals in education and vocational rehabilitation. Luft brings forth twenty years of research in the area of transition for the DHH adolescents, with publications on topics ranging from transition services to reading skill assessments to deaf education. Her expertise in this field and subject matter becomes apparent not only through how her literature covers the pertinent issues in DHH transition, but how she recognizes the crucial nuances that contribute to the DHH population's complexity.

The first few chapters of *Promoting Positive Transition Outcomes* are aimed at providing an historical overview of transition for DHH youth. First, she explores how hearing loss impacts many areas of an individual's life, particularly during childhood and early adulthood. A crucial starting point is that 95% of DHH individuals are born to hearing parents, and with that, it becomes immediately apparent that the early choices surrounding communication modalities, or lack of, can have a drastic effect on the youth's later academic and employment outcome. Following this, she explores the legislative history, which have led to the shaping of the required transition meetings for youth who are aged 16, sometimes 14, and that these transition meetings are the result of education and employment laws such as the Individuals with Disabilities Education Act, the Section 504 of the Rehabilitation Act of 1973, as well as the Americans with Disabilities Act (ADA) of 1990 and its amendment in 2008. The vocational rehabilitation legislation and education legislation, although separate, have come together to inform the other with respect to mandating transition services for youth with disabilities.

A very salient message throughout these chapters is that when providing transition services to DHH youth, one cannot simply categorize hearing loss as just another form of disability among a broader range of labels used in the field. Luft explains:

Perhaps because the increasingly abstract and complex understandings are beyond the communication fluency levels of most DHH students. Accommodations provide them with access to the information but do not address missing linguistic structures, socio cultural understandings, or cognitive skills that allow DHH students to acquire and manipulate such content. (p. 51)

For those new to working with DHH adolescents, this is a crucial point. Luft continues to emphasize and drive home the point of linguistic complexity of the transition context for DHH individuals, specifically in how the IDEA specifically spells out in its requirement that transition team members must:

Consider the communication needs of the child, and in the case of a child who is deaf or hard of hearing, consider the child's language and communication needs, opportunities for direct communications

¹ The University of Texas Austin

with peers and professional personnel in the child's language and communication mode, academic level, and full range of needs, including opportunities for direct instruction in the child's language and communication mode. (p. 44)

Promoting Positive Transition Outcomes then addresses the difficulties and issues facing transition outcomes in areas of employment. Employers may be unaware of their requirement to abide by specific ADA stipulations, or may have misconceptions about individuals with hearing loss that are grossly misinformed and even intentional, both which continue to pose a barrier to employment for many individuals who are DHH today. In addition, the IDEA 2004 was written to ensure that IEP transition teams have accurate data for identifying appropriate, measurable postsecondary goals, for determining and prioritizing the necessary transition services and for measuring these achievements. However, she continues to emphasize caution in utilizing assessments designed for general disability upon DHH adolescents by identifying reliability and validity concerns.

Luft emphasizes the role of Rehabilitation Counselors for the Deaf, or RCDs, as a crucial component of transition teams for they bring experience and knowledge of issues that face DHH individuals. Luft cites several studies that show that working with RCDs leads to improved outcomes for DHH in achieving their employment goals.

Including RCDs in transition team meetings is an important strategy to guarantee that DHH students receive the employment preparation and skills they need in order to meet adult agency and career expectations, and to balance what can otherwise be substantial pressures to focus primarily on academic outcomes. (p. 164)

After covering many of the issues that are common to DHH individuals in secondary and postsecondary settings, Luft presents the hidden fruit of the book; strategies and models for providing effective transition services. First, she presents Bronfenbrenner's ecological systems model, which is a common model used to help identify and explain processes and interactions proximal to individuals (i.e., family, institutions) and how they influence and shape individuals' lives. Following this, she presents a person-centered planning (PCP) approach to transition planning, and presents

concrete plans that are comprehensive, including a plan for identifying independent living skills. Readers will find this book extremely helpful with insights from an author whose knowledge and research experience with transition services is far unparalleled. Although Luft is an academic, she maintains a level of readability that is easy to understand. She draws from research evidence from a range of sources with no shortage of statistical information.

As someone who has been a recipient of transition services and IEP meetings, as well as having studied rehabilitation counseling, owned and operated a job placement services, and participated in transition team meetings, I can say with confidence that Luft covers many of the essential issues that arise when providing transition services. I am impressed with the breadth of knowledge that Luft puts forth in this book and how she incorporates a very comprehensive base of research evidence to inform her book. Further, as a Deaf individual myself, I think it is crucial to touch upon a point that that Luft honors, recognizes the importance of certain core cultural values of the Deaf community, and how these values drive their effort for advancement in a society that has long ignored, neglected or simply prevented their right for equality in education, employment and civil rights.

References

Punch, R. (2016). Employment and adults who are deaf or hard of hearing: current status and experiences of barriers, accommodations, and stress in the workplace. *American Annals of the Deaf*, 161(3), 384-397.

About the Author

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