

Association on
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Journal of Postsecondary Education and Disability

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FROM THE EDITOR

DAVID R. PARKER

Abraham Lincoln wrote, “Upon the subject of education, not presuming to dictate any plan or system respecting it, I can only say that I view it as the most important subject which we as a people may be engaged in.” His words convey universal wisdom that transcends time and cultures. So much of a college student’s education stems from the integration of experiences in and out of the classroom. This issue includes six research articles, a practice brief, and a book review. They share a focus on how students carry out that integrative experience. The authors provide insights into how we can influence key factors that shape a “most important subject.”

Gilson and Dymond studied a constellation of barriers that affected postsecondary students with disabilities in Hong Kong. Their qualitative interviews with students, instructors, and university staff identified six types of barriers. The authors present a thought provoking discussion about the interplay of self-advocacy and cultural norms.

Costello and Stone draw upon positive psychology and self-efficacy theory to explore the interactions of faculty, support staff including disability service providers, and students with ADHD and LD. They invite readers to consider how our attitudes and practices influence students’ sense of competence in higher education settings.

Whitney, Langley-Turnbaugh, Lovewell, and Moeller studied a unique campus-based program designed to support students majoring in science, technology, engineering, and math (STEM) majors. Read how undergraduates with various disabilities used a learning community to enhance their social capital while persisting in challenging coursework.

Lightner, Kipps-Vaughan, Schulte, and Trice studied freshmen with learning disabilities to better understand their decisions about whether and when to utilize disability services supports. Their findings underscore the importance of effective transition planning and identify benchmark periods during the freshman year that influenced students’ self-advocacy.

Hedrick, Stumbo, Martin, Nordstrom, Martin, and Morrill surveyed AHEAD members to explore their provision of personal support assistants to students with severe physical disabilities and the service providers’ satisfaction with these services. In proposing a tiered model linking the extent of services to campus size and type, the authors note a need for further research to explore this issue from students’ points of view.

Reynolds, Johnson, and Salzman studied a state-wide effort to screen Adult Basic Education students for learning disabilities. Learn more about this systems approach to providing accurate yet affordable diagnostic assistance to potential members of the largest subgroup of postsecondary students with disabilities.

Blaser, Braitmayer, and Burgstahler describe an innovative two-day workshop involving high school and college students, campus personnel, and community partners. This practice brief describes the authors’ efforts to promote greater involvement of students with disabilities in postsecondary design education. Read how this replicable program addressed recruitment and career objectives.

Peña reviews the book, *Disability Services and Campus Dynamics* (2011). JPED readers will recognize many of the book’s contributing authors as well-respected leaders in the field, beginning with co-editors Harbour and Madaus. This thoughtful article previews a comprehensive volume that provides historical perspective and current discussion about a range of topics that shape students’ participant in higher education. Peña highlights the authors’ clear understanding of forces that influence how campus-based practices evolve.

Summer marks the end of one academic year and time to reflect about new opportunities in the year ahead. May these articles contribute to your reflection and planning.

Barriers Impacting Students with Disabilities at a Hong Kong University

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Abstract

A qualitative study was conducted to examine the barriers to postsecondary education experienced by students with disabilities in Hong Kong and the impact of those barriers. Data were gathered from six students with disabilities, their instructors, and university staff with whom they interacted to procure disability-related services using participant observations and semi-structured interviews. Barriers clustered in the areas of architecture, environment, systems, instructor- and classroom-related, student-generated, and the lack of evaluation. Implications are presented for increasing access to postsecondary programs for students with disabilities in Hong Kong as well as for international students who enroll in programs in the United States.

Keywords: Disability barriers, Hong Kong, access, postsecondary students, admissions practices

As one of China's most notable cities, Hong Kong stands at a crossroads between its past and its future, between its traditional makeup and the one being forged by the immigrants from the Mainland of China, and by the changing nature of its postsecondary education system. Orienting readers from North America's education systems with the system in Hong Kong is imperative to contextualize the barriers postsecondary students with disabilities face in Hong Kong. Four categories of barriers to successful postsecondary education for students with disabilities are cited in the Western literature. These include student, faculty, institutional, and social service.

Barriers to Postsecondary Education for Students with Disabilities from the Western Literature

When embarking on an education beyond high school, students with disabilities face a range of challenges over and above those faced by postsecondary students without disabilities (Durham Webster, 2004). Despite the passage of legislation to the contrary, some campuses remain inaccessible physically (Gilson, 2010a; Kroeger & Schuck, 1993), programmatically, (Gilson, Dymond, Chadsey, & Hsu, 2007), and attitudinally

(Gilson & Dymond, 2011) to many students with disabilities. The result is often quite disturbing, as students with disabilities are less likely to remain in their programs of study than are their non-disabled peers (Henderson, 2001).

Student Barriers

In the postsecondary system in the United States, students must self-identify as people with disabilities (Stodden, Stodden, Kim-Rupnow, Thai, & Galloway, 2003; Tagayuna, Stodden, Chang, Zeleznik, & Whelley, 2005), provide documentation of their disabilities to their university's Disability Service (DS) office (Loewen & Pollard, 2010), request reasonable accommodations for their disabilities if warranted (Pliner & Johnson, 2004; Roessler, Brown, & Rumrill, 1998; Stodden, Jones, & Chang, 2002), problem-solve if accommodations break down or fail to meet their needs (Gajar, 1998), and interact with faculty concerning reasonable accommodations (Lancaster, Mellard, & Hoffman, 2001). New college students may need time to learn how to interact with college personnel in such a proactive manner because these skills, in general, may not be required or taught at the secondary level (Stodden et al., 2003).

Students lacking problem-solving skills often react passively to budding academic difficulties (Green, 1996). Other students do not make their disabilities known to DS staff and, therefore, do not receive accommodations (McBroom, 1994). Still others register for services through DS offices but fail to initiate requests for accommodations. Typically, DS providers offer accommodations that are functional rather than interactional (Stodden et al., 2002), meaning that the DS staff suggests what accommodations may be provided for given disability types instead of asking about the supports a particular student with disabilities may need in a given class (Kurth & Mellard, 2006).

To further complicate their adjustment to postsecondary life, the support network of other students with disabilities and the disability culture familiar to them in secondary school radically changes in college (Cawthon & Cole, 2010; Stodden et al., 2003). The level of support from family and friends offered to students with disabilities varies widely in the United States (Brockelman & Olney, 2005), and the amount of competition among students at the postsecondary level is higher than in high school (Cawthon & Cole, 2010; Stodden et al., 2003). In addition, those with disabilities often have fragile self-esteems (Barry & Mellard, 2002; Hartman-Hall & Haaga, 2002). Many students with disabilities are reluctant to ask for help for fear of being viewed as burdensome (Barry & Mellard, 2002; Roessler et al., 1998).

Institutional Barriers

There is a lack of consensus among professionals regarding the accommodations needed by postsecondary students with disabilities (Tagayuna et al., 2005). Student service offices are grappling with shrinking budgets (Bok, 2003). American postsecondary students with disabilities have repeatedly noted that their requests for reasonable accommodations under disability anti-discrimination laws are often not implemented in a timely fashion or in an effective manner (Durham Webster, 2004; Gilson et al., 2007). Because different disabilities present varying access needs, an examination of some specific barriers is warranted. Physical access to many buildings for students using wheelchairs may be nonexistent (Gilson, 2010a) or so cumbersome as to discourage students using wheelchairs (Holloway, 2001). Students who are deaf or hard of hearing struggle to comprehend in classes when sign language interpretation, Communication

Access Real-Time Translation (CART), or C-Print are not present (Kroeger & Schuck, 1993; Marschark, Leigh, Sapere, & Burnham, 2006; Marschark, Sapere, & Convertino, 2005). Students with learning disabilities weigh the merits of disclosing their disabilities to faculty against trying to turn in work and complete tests on time without reasonable accommodations (Cawthon & Cole, 2010; Finn, 1997; Loewen & Pollard, 2010), while students with psychiatric disabilities regularly encounter stigmatization by faculty when disclosing their disabilities (Weiner & Wiener, 1996). Students with visual impairments worry that they will not have access to accessible formats of their textbooks in time to keep up with reading assignments (Gilson et al., 2007; Holloway, 2001).

Faculty Barriers

Administrators and faculty play key roles in creating a supportive environment for students with disabilities (Wilson & Getzel, 2001). Although many faculty are willing to interact positively with students with disabilities (Gilson, 2010b) they may unintentionally erect barriers inhibiting student success (Thomas, 2002). Some faculty have never been adequately trained in providing accommodations to students with disabilities (Cawthon & Cole, 2010; Finn, 1997; Tagayuna et al., 2005) or have not been exposed to students with disabilities (Leyser et al., 1998). The result is that faculty often are unaware of how to adapt their teaching to suit the needs of students with a variety of learning styles (Stodden et al., 2003).

Social Service Agency Barriers

Barriers can arise from the very social service agencies designated to serve students with disabilities. For example, many postsecondary students lack adequate training in assistive technology (AT) (Kapperman, Sticken, & Heinze, 2002) and AT is often prohibitively expensive (McBroom, 1994; Michaels, Pollock, Morabito, & Jackson, 2002). The vocational rehabilitation system's eligibility criteria and service intricacies can be a formidable challenge for students with disabilities (McBroom, 1994). Obtaining benefits from cash assistance programs for people with disabilities is often a slow and complex process. These barriers present difficulties that are not negotiated by students without disabilities.

Barriers to Postsecondary Education in Hong Kong

Few barriers to postsecondary education in Hong Kong are indexed in English-based academic literature from the West. Competition for admissions slots at the university level is particularly fierce in Hong Kong (Chan & Ma, 2004; Wong, Pearson, & Lo, 2004; Wong & Seeshing, 2004). Students wishing to matriculate into higher education in Hong Kong must pass the Hong Kong Certificate of Education Examination (HKCEE) – an examination given in what is equivalent to the 11th grade in the United States. Students take tests in eight areas, including Chinese and English. A passing grade is given to students who succeed in five of the eight subjects (Wong & Seeshing, 2004). These practices are vestiges of Great Britain's influence on Hong Kong's educational system (Tsang, 2004). Even those who pass the HKCEE might not necessarily secure a place in postsecondary education. Therefore, the chance for those students who fail the HKCEE to gain admittance in higher education is practically nil (Wong & Seeshing, 2004).

Levels of family support for postsecondary students with disabilities in Hong Kong vary (Gilson, 2010b). The cost of AT is prohibitively high for Hong Kong students with disabilities (Tam, Mak, Chow, Wong, & Kam, 2003) and is perceived as a luxury rather than a necessity. Given that people with disabilities can often become more independent and productive through the use of AT, barriers to its procurement can impact postsecondary education success rates. The reaction of people without disabilities to those with disabilities plays a role in the stress level experienced by students with disabilities. While people without disabilities in the West tend to hold more positive attitudes toward people with intellectual disabilities and mental illness than they do toward people with physical disabilities (Rubin & Roessler, 2001), in Hong Kong and Taiwan, postsecondary students with physical disabilities tend to be viewed more positively than those with mental illness or intellectual disabilities (Tam & Watkins, 1995).

Graduation from colleges and universities creates many more opportunities for people, with or without disabilities, when seeking employment. In a status-conscious culture such as that in Hong Kong, earning postsecondary degrees results in attainment of a new level of respect in one's community. Therefore, adults with disabilities who are eager to work and gain respect in their communities should have the chance to attend higher education. Investigations of the barriers faced by

postsecondary students with disabilities in Hong Kong are lacking in current, English literature. Though the perceptions of postsecondary students towards people with disabilities were investigated by Tam and Watkins (1995), the research took place before civil rights legislation for people with disabilities – the Disability Discrimination Ordinance (DDO; 1996) – was passed in Hong Kong. When students without disabilities were exposed to people with physical disabilities, their positive attitudes toward people with disabilities increased (Chan, Lee, Yuen, & Chan, 2002). The lack of Chinese literature is especially disturbing, since such literature might convince academics on the Chinese Mainland to work towards admitting more students with disabilities to universities.

The Hong Kong government has sought to eliminate barriers for people with disabilities in employment, education, and public accommodation with limited success. The DDO aims to eliminate discrimination and applies to postsecondary education institutions as well as primary and secondary educational settings. The DDO specifically identifies educational settings as covered entities. Educational institutions are charged with “ensuring that persons with disabilities have equal opportunities in access to, and meaningful participation in, local education” (Equal Opportunities Commission, para 1, n.d.). The DDO defines disability from a medical perspective and lists specific conditions that are disabilities. Claimants may seek redress of disability discrimination, harassment, and vilification.

Given the adoption of the DDO and growing numbers of postsecondary students with physical disabilities, the purpose of this study was to examine the remaining presence and impact of any barriers to postsecondary education experienced by students with disabilities in Hong Kong. Students with disabilities have been attending universities in Hong Kong for many years; their stories should be told, both in popular culture and in academic circles. Dissemination of the findings of this study may stimulate other academicians to adopt similar lines of research and assist DS staff in Western cultures to appropriately accommodate the needs of international students with disabilities.

Methodology

Participants

Three populations at a university in Hong Kong were interviewed for this study: university students with disabilities, their instructors, and staff whose roles brought them into contact with students with disabilities. As compared to the rates of students with disabilities at higher education institutions in the United States (Henderson, 1999), the rate of attendance for students with disabilities at the university where the study was carried out in Hong Kong was quite low, with only 18 out of approximately 20,000 students self-identifying with disabilities (A. Chow, Personal Communication, September 5, 2005). Due to the small number of students with disabilities at the university, a purposive sample (Krathwohl, 1997) was employed in this qualitative study to locate students with a range of disabilities and experiences for study participation. All student participants were from Hong Kong and had sufficient English language fluency to participate meaningfully.

It should be pointed out that English proficiency was a requirement for matriculation at the university in question. Only students who had their disabilities for more than 12 months were approached for participation. This criterion was established to minimize the effects of grieving that typically accompany the acquisition of a recent disability. Students also had been registered at the university for two full semesters prior to the semester when the study was conducted. These two criteria were established in order to select only students with disabilities who were familiar with how their disabilities impacted their daily lives and to learn to what extent the university campus, instructors, and staff were helpful to them as students with disabilities.

The researcher emailed all students with disabilities a general letter describing the purpose of the study and requesting their participation; this action resulted in no responses. The researcher then asked the DS staff to personally contact students to inquire whether they would be willing to participate in the study. Five students with disabilities agreed to participate – four males and one female. A sixth female student indicated initial interest but then decided not to participate. While it would have been preferable to include interviews with students with non-apparent disabilities such as learning disabilities, such students were not registered with the DS.

Participants selected a pseudonym to protect their anonymity. Their majors at the university were

English/geography education, mathematics, political science, and literature. Profiles of the students, minus information that could identify them personally, are provided below.

Berry. A 21-year-old, Berry used a long, white cane for orientation and mobility. Berry had been totally blind since the age of two and was in the second of three years in his undergraduate program. Berry lived in a dormitory for his first year of university and at home with his parents for his second year. His interests included going out with friends, running, and participating in religious activities. He attended a residential school for the blind from kindergarten until the age of 15. At that point he began attending a secondary school for boys with and without disabilities bound for higher education.

Clint. A second-year student who was 28-years-old, Clint had low vision and did not use a cane. Clint began losing his sight in his early teens; he could see steps when lighting was neither too bright nor too dark. He could still make out colors and shapes. Clint had not received orientation and mobility training or learned braille well enough to use it in his daily life. Like Berry, Clint spent his first year at university in a dormitory and elected to live with his family at home for the second year of his program. No one else in Clint's family had a disability. Clint was a connoisseur of the fine arts and he often attended plays and concerts by himself or with his girlfriend. Clint was educated in his neighborhood school; little adaptation was made to the curriculum or instruction to accommodate his vision loss. As Clint's vision continued to ebb, he began experiencing heightened anxiety. At the time of the study, Clint reported bouts of emotional instability and nervousness.

Kathleen. The only member of her family to have a disability, Kathleen was 20 and was a second-year student who had an above-knee amputation of her right leg. She wore a prosthetic leg at all times when in public. With this leg, she was able to climb stairs and traverse the ubiquitous escalators and steep hills of Hong Kong. Kathleen enjoyed an active social life with her friends, including attending clubs and religious activities. Kathleen went to her neighborhood school for elementary, middle, and secondary school. She was excused from physical education classes and recess, but no other adaptations were made for her disability while in school.

Po Sing. Po Sing was 22-years-old and had moderate hearing loss in both ears. He wore hearing aids and his speech was slightly different because of his hearing loss. Po Sing was extremely involved on campus. He had chaired his dormitory's activities committee, volunteered at various organizations, and held down two part-time jobs while at university. Po Sing was the only member of his family with a disability. He attended his neighborhood school from kindergarten through graduation from high school. Other than allowing him to sit in a desk conducive to his hearing, Po Sing was not provided any adaptations to the curriculum or instruction he received in school.

Tony. Of all the students interviewed, Tony's disability was least obvious visually. A 21-year-old, he had a severe hearing loss in his left ear. Tony never wore hearing aids and disclosed his disability only to the DS office and a few close friends. He was active in the university bridge club. Tony enjoyed reunions with his extended family and still lived at home. None of Tony's family had disabilities. He attended his neighborhood school from kindergarten until graduation from secondary school. He was allowed to wear headphones to better hear oral English examinations in school.

The interactions and supports provided by instructors and support staff at a university inevitably affect students with disabilities. Therefore, study participants from both of these populations were recruited. Each of the student participants suggested instructors that the researcher might interview; a total of nine instructors were recruited. A judgment sample (Krathwohl, 1997) was used to select staff for study participation. Representatives from the Equal Opportunity office, the physical plant, student affairs, the counseling center, and the library were chosen, since they had interactions with students with disabilities by virtue of their jobs.

Data Collection

Data were collected through semi-structured interviews with students with disabilities, staff, and instructors, as well as through classroom observations of students with disabilities. During interviews, the researcher noted vocal intonation and emphasis in addition to the words uttered. Because the observer had a significant visual impairment, participant observation of students with disabilities consisted of focused listening to utterances of students and instructors and notation of audible gestures (e.g. pen tapping, paper shuffling, and repositioning in desk chairs).

Interview protocols were developed to incorporate questions about barriers discussed in both Western and Hong Kong literature. Academicians from Hong Kong, Taiwan, and South Korea as well as an American disability rights advocate reviewed the protocols and made cultural and grammatical suggestions. The protocols were revised accordingly. Questions about barriers to physical, attitudinal, and systemic access to university life were posed to student participants. Instructors and staff were questioned about the adequacy of university resources designated to assist students with disabilities, training offered in working with such students, and personal interactions between participants and students with disabilities. The interviewer conducted four semi-structured, face-to-face interviews per student in order to develop rapport and to deepen understanding. One interview each was conducted with nine instructors and six staff at the university as well. All interviews were semi-structured, which allowed interviewees to control the order of the questions presented and the content emphasized.

The researcher conducted observations in student participants' classrooms. Student attendance and participation in class were noted when conducting observations in order to document how students with disabilities interacted with their classmates, the course instructors, and others in the settings. The researcher observed each of the students with disabilities' classes a total of ten times. This amount of engagement with the participants was critical to gain a deep understanding of the students (Bogdan, 1972).

Data Analysis and Interpretation

The lead author who carried out this study is totally blind and counts herself as part of the disability rights movement. Therefore, her biases as a disability rights advocate have influenced the interpretation of these data and the relationships she formed with study participants. While the researcher grew up in the United States and had minimal contact with people from Hong Kong until her study began, all student participants grew up in Hong Kong and spoke Cantonese as their first language. Had the researcher been able to interview the participants in Cantonese, it is likely that the study findings would have been richer. The researcher also acknowledges that her lack of lived experience in the Hong Kong culture means that her interpretation of the study findings probably varies significantly from what a Chinese researcher might find. Nevertheless,

member checks were employed as a means of minimizing the bias brought to the study (Lincoln & Guba, 1985). Member checks allowed participants to assume a more equal role with the researcher.

A modern form of content analysis (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005) was employed to analyze the data collected in this study. Notes taken during participant observations were re-read and expanded upon after each session by adding reflections about four dimensions: method, ethical dilemmas and conflicts, the researcher's frame of mind, and points of clarification. The interviews with students, instructors, and staff participants were transcribed in their entirety. The transcripts were initially categorized according to the questions posed during the interviews. All of the interview and participant observation data were coded by the first author, and 20% of the coded data were read by the second author. Consensus was reached about the development of codes and the ways in which data were organized under the codes. In order to represent all participant perspectives thoroughly, both convergence and divergence were sought in this study. Thus, triangulation was not a goal. The credibility of the findings was enhanced as a result of complementarity being reported (Greene, Caracelli, & Graham, 1989). Whether a particular person's point of view agreed with others did not determine whether their data were reported.

Findings

The barriers identified by student, instructor, and staff participants in this study could be characterized as architectural, environmental, systemic, instructor- and classroom-related, student-generated, and lack of evaluation. It should be noted that the supports offered to students with disabilities in this study have been published elsewhere (Gilson, 2010b). By and large, the students with disabilities interviewed for this study were happy with the accommodations they received at their university.

Architectural and Environmental Barriers

The landscape of Hong Kong Island, being exceedingly hilly and prone to mud slides, presents challenges for providing physical access. The university was built on a "steep, steep hill, and with different platforms," according to the architect employed by the physical plant of the university. When referring to as recent as 30 years ago, a university staff member commented,

"At that time physical accessibility was in fact...not a very common concern." Environmental barriers often posed challenges for students with disabilities. Environmental factors were barriers to some students but less problematic for others. Of the five students observed, only one seemed to sit in classes where outside noise did not disrupt the class significantly. Audible distractions included students shouting near classroom doors, construction drills, the slamming of doors, the movement of loud carts down corridors, wind whistling through doors, and the loud use of audio visual equipment in other rooms. The weather's effects often impeded the ability of Clint and Kathleen to move around the campus safely. When the sun was too bright or not bright enough (e.g., at dusk), Clint could not see well enough to discriminate changes in elevation such as steps. He preferred to stay home at nighttime. Kathleen found certain areas of the campus to be very slippery when it was raining or had recently rained. On one of the occasions that the researcher observed Kathleen, she was late to class because she had just fallen, due to the rain.

Systemic Barriers

Several services commonly provided by DS offices in the United States were not provided to students with disabilities at the university. While this university is well known for its services for students with disabilities, when this study was conducted, the DS office did not provide sign language interpreters for students who are hard of hearing or deaf. Whether that is because no deaf students had requested an interpreter or because the university would not provide such accommodations is unknown. The Disability Discrimination Ordinance Code of Educational Practice does require educational institutions' goods, services, and facilities to meet the needs of people with disabilities, unless doing so would constitute unjustifiable hardship (Equal Opportunities Commission, n.d.). Provision 16.2.2 of this document does require that an appropriate medium of communication be made available and does provide an example of sign language as one communication medium.

Students who use wheelchairs are advised to attend another university in Hong Kong, which is more physically accessible. Students with learning disabilities in Hong Kong rarely even take college entrance examinations. Therefore, would-be university students with learning disabilities seldom have the chance to enroll at university.

The university's financial aid office oversees funds designed to purchase equipment for students with disabilities such as computer hardware and software and hearing aids. At the time of data collection, two of the student participants had applied for funding through this office but had not been awarded any money. Therefore, Po Sing had to purchase his own hearing aids. Once Kathleen turned 21 and was no longer covered under her mother's health insurance plan, she would have to pay at least partially for any alterations to her artificial leg. She found contemplation of this added cost to be stressful. While she could also apply for funding to offset these costs, awarding of funding is not guaranteed.

The researcher asked staff whether they had adequate personnel, support, and time within their days to serve students with disabilities appropriately. Although his was one of only two voices that said no, one staff member's comments shed light on an important issue. The staff member worked at the university's student counseling office and expressed the following concern. "When you have five or six cases, and then, suddenly, you have a crisis. ... That's where our manpower now has reached to the stage where we cannot; we do not have a backup." A more representative observation was that staff could carry out their current duties adequately but were concerned about their ability to maintain their high level of service to students if other duties kept being added to their job descriptions. A high-ranking staff member in student affairs stated that the needs of students with disabilities were fulfilled as adequately as they were for all other students with sets of needs. He gave an example of an international student who is attempting to fit in at the university, for comparison purposes. Such an international student would have needs beyond those of a typical student as they attempted to become part of the university culture.

An attitudinal barrier identified by staff at the university used to be present but was less so at the time of the study. One of the staff who helped students with disabilities to succeed in their classes described the way instructors used to feel about welcoming students with more significant disabilities into their classes. She described them as more difficult to help than the students with milder disabilities. She recalled a student with fragile bones, saying, "That was a very difficult case...especially because that occurred years ago, when the whole university community was not that sensitive to the needs of the students." The student in question ended up dropping out of the university before he completed his degree.

Instructor and Classroom Related Barriers

Instructors learned that they had students with disabilities in their classes in two ways. The students either disclosed their disabilities or the instructor noticed the disability through observation of the student in question. If the DS office had attempted to notify the instructors of the presence of students with disabilities in their classes, those communications did not reach the instructors. The majority of the instructor participants were not certain whom they could contact to seek assistance regarding students with disabilities in their classes.

Several barriers were identified by the student participants in this study, which were intentionally or unintentionally erected by instructors at the university. While students were quick to point out the barriers, they were less eager to provide informative feedback that might aid the instructors in altering their instruction to better meet student needs. Instructors' intentions to accommodate students were usually good, but they sometimes forgot to continue to alter their content delivery or materials throughout the semester. Clint explained that he would ask his instructors a total of two or three times to announce what they were pointing to on the board as they lectured. If they continued to forget to verbalize their gestures, he gave up reminding them. Berry understood that it was difficult for instructors to change their teaching styles; therefore, he was patient with instructors who neglected to tell him what they were pointing to on the board.

In contrast to the interviews in which instructors and students explained classroom accommodations, the researcher observed few attempts by instructors to adapt their teaching styles to the individual needs of students with sensory disabilities. One of Po Sing's instructors often faced away from her students as she read aloud from her slide presentations. Her voice was frequently soft as well. While sitting for her interview with the researcher, she acknowledged that she should speak slower and louder to accommodate Po Sing. During a class that the researcher observed, this instructor likened her rate of speech to a "machine gun." Po Sing mentioned the thickness of her Spanish accent and the quietness of her voice as barriers for his clear understanding of her lectures. Po Sing's other observed instructor also spoke quietly, especially when she was not using the microphone. Both Tony and Po Sing struggled with comprehension when instructors spoke too quickly in class. In classes where instructors

used microphones, Po Sing observed, “The microphone used in class is not always so clear.” One of Tony’s instructors frequently talked into his microphone so loudly that it distorted his voice.

Berry and Clint emailed their instructors to request electronic versions of any handouts or slides for class. Clint estimated that about half of his instructors sent him his requested handouts or slides. Berry corroborated Clint’s assertion that some instructors neglected to send him handouts. “I was quite shocked because of her rejection,” Berry said of an instructor who refused to give him the lecture notes for his class electronically. He went on to say, “So, I really felt very bad that day, because...I don’t think I asked her for too much.” Clint stated that even when instructors sent him electronic versions of handouts, their structure often made them difficult for him to use with a screen reader.

Clint identified a systemic barrier that impeded his ability to receive meaningful feedback on his papers assigned in class. The university sends out papers written by students for external examination by anonymous reviewers. Clint emailed all of his instructors at the beginning of the semester to request that instructor and external reviewer feedback be written in an email so that he could read it, since he was unable to see comments written on the hard copies of his papers. Clint estimated that only 20% of his instructors complied with his request.

Student-Generated Barriers

The complexity of human interaction makes it necessary to examine attitudinal barriers from multiple perspectives. Peers of students with disabilities unknowingly erected barriers for their colleagues with disabilities. On the other hand, the students with disabilities themselves made some choices that negatively impacted their success at the university.

Attitudinal Barriers from Other Students. An important component of university life for many students is living in residence halls. Clint and Kathleen encountered discrimination in their dormitories when initially applying or reapplying for a room. A student committee from each dormitory reviewed applications and determined who would be allowed to live there. When Kathleen asked about the reason for the denial of her application, she was told that she would not be able to participate in sports activities organized in the dormitory because of her mobility impairment. Kathleen was able to secure a room in the dormitory after taking her case to the DS office.

Clint’s second year application to live in the dormitory was sent in late, since all notices of the application deadline were tacked up on bulletin boards. Because of his level of vision loss, he could not read print. He reapplied late, and his application decision was delayed. Furthermore, the student committee was worried about the traffic situation near the dormitory. They were concerned about Clint’s ability to navigate safely when entering and exiting his dormitory. The DS office was willing to intervene in the situation to help Clint, but he decided to live at home and save money for his second year at university. Clint was frustrated by the evasive approach the committee took. He wished they would have had a frank discussion with him about their concerns.

Berry’s classmates may have been unaware of how to include him meaningfully in class. One of Berry’s instructors assigned her students to groups for presentations about their teaching practicum experiences during class. They were to prepare slide presentations for the benefit of the other students in the class. Berry had emailed all students, asking them to send him the slide presentations before class so that he could listen to them electronically. When they did not send the slides in advance, neither the instructor nor Berry followed up during class. The slide presentations were used as students presented, even though Berry could not read them due to his vision impairment. After class, Berry chose not to follow up with his classmates to obtain the documents. The instructor speculated about why Berry did not pursue the issue. “I do feel that sometimes he really just doesn’t want to, like, be a burden to his classmates.” Berry affirmed this instructor’s assessment of his wishes.

Barriers Caused by Students with Disabilities. Students with disabilities were sometimes reluctant to request accommodations from their class instructors during the lectures or tutorials. Instead, Po Sing and others were more comfortable asking for accommodations during class break times or in an instructor’s office. If students needed help in class and were sitting near their friends, they were generally comfortable asking for assistance from their friends but were not comfortable approaching acquaintances for help.

Berry’s lack of sufficient communication and follow-through resulted in more barriers in his attempt to participate fully in classes than was necessary. Despite one of his instructor’s valiant attempts to provide electronic formats of documents to Berry, she rarely

received useful feedback from him when doing so. For example, she asked Berry to notify her whether Microsoft Word® files were preferable to Adobe® Portable Document Files (PDF), but Berry did not reply to her emails. In a subsequent email she numbered her questions about his formatting preferences to encourage specific feedback. Because of Berry's lack of response, her attempt to remove this barrier for Berry was not as successful as it could have been.

Some students made choices that negatively impacted their academic performance. Po Sing did not wear his hearing aids during his first year of classes at university. This decision resulted in him not hearing much of class lectures and discussion. He had internalized the shame brought about when others reacted to seeing the hearing aids in his ears. In order to avoid that negative reaction, he was initially willing to endure the consequences of not hearing well in class at university (e.g., receiving lower grades than his hearing peers). He decided to begin wearing his hearing aids when he realized his academic results for his first year were not up to his standards of performance.

Clint identified another choice made by a student with a disability that likely resulted in poorer academic performance. The DS office had set up a program whereby volunteers scanned textbooks and course materials for students with print reading disabilities. The reading materials for one of Clint's Chinese courses were copied poorly, making them impossible to scan. Rather than locating someone to read them aloud for him or to record the readings onto an MP3 media player, Clint chose to not complete the assigned readings for his courses. He pointed out that few of his classmates did, either.

Kathleen's absenteeism from class was disability-related and likely affected her level of engagement with course material. Kathleen missed portions of her classes because of frequent doctor visits for the fitting of her artificial leg. Because she could not walk as quickly as her classmates, she was late to class at times as well. When the weather was rainy, Kathleen would occasionally choose to skip classes altogether. The reason she gave for these choices was that she tended to slip and fall more in the rain. She estimated that she skipped classes about once or twice per semester. Kathleen was not observed in all of her classes, but she missed at least two of the classes the researcher had intended to observe. Therefore, her rate of absenteeism may have been higher than her estimate. Kathleen's in-

structors seemed to be compassionate about her frequent absences in their interviews, but it is unclear how much content Kathleen missed that was covered in class.

Lack of Evaluation

During interviews with staff and instructor participants, the researcher found few formal attempts to evaluate the effectiveness of accommodations put in place for students with disabilities. However, informal mechanisms were adopted. Three instructors would pull the students with disabilities in their classes aside before or after class to ask them how they were progressing in class. As students with visual impairments who needed to gain access to teaching materials before class, Clint and Berry both initiated the process of requesting accommodations with their instructors. However, as the semester progressed, two instructors did not make formal attempts to evaluate the effectiveness of the accommodations they had put in place for Clint and Berry. Another of Berry's instructors did do so, but Berry failed to respond to her inquiries in a specific manner. Tony's instructors did not know that they had students with disabilities in their classes; therefore, they did not evaluate any accommodations made.

Staff verified the existence of channels through which students could address accommodation concerns, but few had processes in place to evaluate accommodation effectiveness. The staff member charged with upholding equal opportunities for minorities did monitor all of his open cases regularly by seeking feedback from both parties to the complaints. The DS staff met with each of her students with disabilities at least once per year to reevaluate their needs. No units whose staff the researcher had the opportunity to interview conducted formal surveys or evaluations for improvement, however.

Discussion

The accommodation of students with disabilities at university is a complex process involving many entities. Services are delivered by numerous university departments, which may or may not communicate information effectively across departmental lines. In addition to departmental efforts, instructors with differing levels of familiarity with disability teach students with disabilities. Student-instructor interaction is critical, and students possess varying skill sets in asking for and monitoring the provision of accommodations.

Though most students and instructors intend to be helpful, barriers often arise during interaction with students with disabilities. In the case of many of the students interviewed in this study, they were reluctant to confront their peers and instructors to eliminate such barriers.

Critical Analysis of Barriers for Postsecondary Students with Disabilities

When designing the interview protocols for this study, we thought that the students interviewed might have identified more barriers than they did. Perhaps one factor contributing to this was that students with the most pronounced mobility or hearing impairments were not attending the university at the time of this study. When student participants did identify barriers to their participation at the university as students with disabilities, it was surprising that they did not take proactive steps to address their own concerns.

Students with disabilities who do succeed at procuring sufficient accommodations at university must be more assertive than their nondisabled peers (Shevlin, Kenny, & McNeela, 2004). Assertiveness is sometimes discouraged in Chinese culture (Nisbett, 2003). This concern is also prevalent in the United States (Jones, 2002). Most of the student participants struggled to comprehend lectures and class discussions at the university because of a lack of accommodation in class. Instructor-caused barriers in higher education are not unique to Hong Kong by any means (Blackorby & Wagner, 1996; Chan & Elliott, 2000; Gilson et al., 2007; Kiyimba, 1997; Madaus, 2000; Meister, 1998; Senge & Dote-Kwan, 1998; Shevlin, et al., 2004; Tinklin & Hall, 1999). Had the student participants in this study been more willing to advocate for their accommodation needs, their academic success at the university probably would have been higher. Unfortunately, the fear of being burdensome to others when seeking assistance for disability-related needs is common among Hong Kong and U.S. students with disabilities (Barry & Mellard, 2002). Although some researchers have found that Western students reveled in the independence they experienced in college compared to high school (Barry & Mellard, 2002; Borland & James, 1999), independence was less desirable and more difficult to obtain for student participants from this study.

The Muted Presence of Non-Apparent Disability

Whereas postsecondary students with hidden disabilities have been seeking services and accommodations in the West in increasing numbers over the past two decades (Weiner & Wiener, 1996), the demographics of the students served by the university's DS office in this study indicated that students with non-apparent disabilities were not served as much. Whether such students were present on the university campus and merely chose not to disclose their disabilities, or were not allowed to enroll at the university, could not be determined in this study.

Clearly, the rigorous examination system present in Hong Kong to weed out would-be university students who struggle academically must contribute to fewer numbers of students with learning disabilities in postsecondary education. The researcher specifically asked whether students with learning disabilities often received accommodations at the university. Apparently, such students rarely passed the HKCEE examination. Therefore, they would be unable to apply for admission at a university. Certainly, obstacles at this early stage of higher education are not unique to Hong Kong (Cawthon & Cole, 2010; Tinklin & Hall, 1999).

Despite the above barriers, a few students with learning disabilities had attended the university according to the DS office representative. And yet, when instructor participants were asked about the types of students with disabilities they had had in their classes, none mentioned students with learning disabilities. This finding must be interpreted with caution, since those with learning disabilities may have elected to not disclose their disabilities to their instructors. An unfortunate cycle ensues. Students are reluctant to disclose their disabilities, faculty are not educated as to the presence of students with non-apparent disabilities in their classes, therefore students with non-apparent disabilities are not accommodated.

Even the accommodations used by students with hearing and visual impairments were less than those afforded to American students with the same disabilities. Someone with Po Sing's level of hearing loss would have likely been provided with an assistive listening device for comprehension of class lectures were he a student in the United States. Similarly, paid staff would have scanned Clint and Berry's textbooks if they were enrolled in a university in the United States (Gilson et al., 2007).

Barriers Present in the Study and in the Academic Literature

Additional barriers pose challenges for students and others with disabilities on university campuses. Physical barriers in higher education differ little in substance between the East and West (Gilson, 2010b) but are more pervasive in Hong Kong. Laws prohibiting inaccessible architecture in the United States have been in force since the 1970's (P.L. 43-112) but are only fifteen years old in Hong Kong (DDO, 1996). Furthermore, while the ADA allows individuals who have experienced discrimination to sue for redress, the DDO's Code of Practice for Employment is not legally binding (Ng, 2011). When these barriers are compared to the breadth of barriers present in the United States, those in Hong Kong can be characterized as having similar causes but as being more inhibiting at the current time. As disability becomes more mainstream in Hong Kong, it is anticipated that these barriers will gradually erode.

Communication difficulties between faculty, the DS office, external examiners, and students with disabilities were noted by instructors in this study and by faculty at American institutions (McEldowney Jensen, McCrary, Krampe, & Cooper, 2004). A lack of knowledge about support services or who to contact to set up accommodations for students with disabilities was reported by instructors in this study and by others (Leyser, Vogel, Wyland, & Brulle, 1998). Instructor participants who had not known they had students with disabilities in their classes would have preferred knowing about those students so that they could address their needs appropriately. Seamless coordination of services and accommodations involves careful planning but is worth the effort when improvements for students with disabilities are realized.

Training for instructors and students with disabilities on various topics is needed, according to these findings and to Myers (1994). The lack of training for students with disabilities on the use of AT is a barrier that is common to students in Hong Kong and in the United States (Kapperman, Sticken, & Heinze, 2002). The appropriate accommodation of students with psychiatric and learning disabilities remains a controversial issue (Phillips, 1994). A few instructors in this study and several from others (Barry & Mellard, 2002; McEldowney Jensen et al., 2004; Shevlin et al., 2004) felt that accommodating students with psychiatric disabilities was more problematic than students with physical disabilities.

Training for faculty on how to appropriately accommodate students with all types of disabilities in their classes was a concern not unique to the university studied (Kroeger & Schuck, 1993; Lancaster et al., 2001; Myers, 1994). Some American higher education institutions provide faculty training (Barry & Mellard, 2002). Evans, Asssadi, and Herriott (2005) point out that significant contact among members of the university community with and without disabilities improves faculty awareness of disability issues. Myers suggests that people with disabilities be recruited to provide training to faculty and staff at universities. These barriers shared across geographic boundaries may be indicative of similar problems in the United States and Hong Kong. Faculty in both countries may be chronically over-worked, thereby lessening the chances of receiving adequate training to instruct and accommodate students with disabilities effectively.

Limitations

The range of disability types represented by student participants in this study was narrow; the sample drawn was not random and was very small. Hence these findings are not generalizable. Findings from students with psychiatric, learning, and health disabilities may have differed substantially from those reported in this article. The primary researcher was totally blind and this was obvious to those whom she interviewed. Her disability may have shaped the breadth and depth of the answers to questions posed. All research for this study was carried out in English even though the participants' native language was Cantonese in most cases. Lacking the level of understanding of the Hong Kong culture that comes with being raised in it, the primary researcher undoubtedly missed cues and underlying messages participants attempted to communicate. However, the primary researcher did ask Hong Kong colleagues to provide interpretation of transcribed interview passages that she found confusing.

Implications for Research

How successful postsecondary students with disabilities balance their need for accommodation with their culturally-determined values is a topic that warrants further study by those who are conversant with the culture and with disability in Hong Kong. In a culture such as Hong Kong's, in which figures of authority are generally revered, how people with disabilities will claim their rightful status as the best-informed experts

about their own lives is a critical question (Gilson, 2010b). The students interviewed did not use language that indicated their willingness to advocate strongly for themselves. Not only does the reluctance to advocate affect the levels of accommodation students with disabilities receive at a university, but it also may lead to potential problems in securing accommodations in employment settings upon graduation.

Awareness of disability issues by members of the general public as well as university officials is a concern in Western and Asian settings (Myers, 1994). Those uneducated about disability often resort to stereotypical myths that inaccurately characterize disability. When members of the university community are unaware of legislative, educational, or service provision efforts on behalf of people with disabilities, their ability to adequately assist students with disabilities is hampered. As postsecondary students from Asia and the West continue to study abroad, their cultural perspectives on disability and their needs for accommodations must be investigated in home and host institutions. Regrettably, many Westerners (Nielsen, 2004) and Asians (Gilson & Dymond, 2011) do not see disability rights advocacy as the most appropriate political action of citizens with disabilities. Indeed, one of the most famous American historical figures, Helen Keller, was a socialist and an avid feminist but held conservative views related to disability that are repugnant to today's disability rights activists (Nielsen, 2004).

Since one's status in society determines whether one is able to question current practices (Hampton, 2000), advocacy takes on an entirely different context in China. If one equates disability rights work with criticism of the current system, one likely encounters a roadblock in the academic system in Hong Kong. Kwok (2000) characterizes this phenomenon as stifling criticism. Whereas Asians tend to think that you cannot understand the part without understanding the whole, many Westerners feel that they can exert control over events because they know the rules that control objects (Nisbett, 2003). Understanding the various players in advocacy situations and their connections to each other is of critical importance in much advocacy done in collectivistic cultures (Hofstede, 2001) like Hong Kong. Americans conducting advocacy would rely on procedural safeguards and civil rights protections, whereas advocacy in Hong Kong might involve a private, non-direct conversation with a decision-maker. Hence, advocacy in Eastern and Western realms can

be very different. It is hoped that this study encourages Hong Kong Chinese to conduct research in Cantonese, which appropriately situates the context and meaning of disability rights advocacy in Hong Kong. Perhaps research will serve as a catalyst for sparking further disability rights advocacy in Hong Kong.

Practical Implications

Higher education institutions in Hong Kong are urged to elicit feedback from key stakeholders (e.g., students with disabilities) as services are redesigned to better meet the needs of students with disabilities. Affording all students equal opportunities to succeed at university is a measure of best practices (Nunan, George, & McCausland, 2000), and it is in the interest of higher education institutions to do so (Gilson, 2010b; Lian, 2005). Otherwise-qualified students with a wider variety of disabilities need to be given the chance to enroll in postsecondary education in the next few years. A more comprehensive range of accommodations and AT should be provided to Hong Kong students with disabilities in the future. The range of accommodations available to this study's student participants was smaller than ranges typical at Western institutions of higher education (Lancaster et al., 2001; Leyser et al., 1998). Even with the accommodations provided in classes, some students still struggled to participate optimally. Although the current study focused on barriers within postsecondary education, it appears that an equally important barrier exists for many students with disabilities simply in gaining access to university. Greater flexibility in the HKCEE examination system would allow students with a wider range of disabilities to benefit from a university education. This shift in demographics and their implications should be investigated.

The lack of academic courses on disability topics, few disability awareness events for students, and few advocacy efforts on the part of students with disabilities should be addressed on more campuses. Training offered on disability topics for a wide audience at higher education institutions benefits everyone and is a vital component of addressing attitudinal barriers related to disability. Students without disabilities who sign up for courses on disability studies may be transformed into allies of fellow students with disabilities. Students with disabilities who learn how to advocate for their needs more effectively benefit academically, as noted by the student participants in this study.

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Positive Psychology and Self-Efficacy: Potential Benefits for College Students with Attention Deficit Hyperactivity Disorder and Learning Disabilities

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Abstract

In this article, the authors examine strategies for supporting college students with learning disabilities (LD) and attention deficit hyperactivity disorder (ADHD) from the conceptual frameworks of positive psychology and self-efficacy theory. Higher education professionals can use principles taken from the relatively new field of positive psychology, which focuses on positive emotion and making people's lives rewarding, to improve the self-efficacy of college students with disabilities by creating positive learning environments and focusing on students' strengths. The academic challenges faced by students with LD and ADHD are particularly well-suited to supports provided by both self-efficacy coaching and a positive psychology approach. This is true even though the two groups differ in significant ways because both theories can be integrated and adapted by counselors, tutors, and other service providers to match the needs of individual students. Research studies examining the importance of increasing self-efficacy among students with LD or ADHD are presented and discussed. Current support services are described and recommendations made for practices that both faculty and disability support service offices can implement to help students with LD or ADHD succeed.

Keywords: disabilities, positive psychology, postsecondary education, self-efficacy

Prior to World War II, the field of psychology had three primary missions: "curing mental illness, making the lives of all people more productive and fulfilling and identifying and nurturing high talent" (Seligman & Csikszentmihalyi, 2000, p. 6). Psychology in the latter half of the twentieth century tended to focus on negative aspects of human behavior and the treatment of mental illness. In the late 1990's, however, prominent psychologists such as Martin Seligman, Mihalyi Csikszentmihalyi and others began calling for the field of psychology to change its focus to the study of human strengths and optimal functioning (Ambler, 2006; Pajares, 2001). According to Seligman and Csikszentmihalyi (2000), this relatively new focus, termed *positive psychology*, emphasizes traits such as optimism and perseverance, well-being, satisfaction, and interpersonal skills, among others. These subjective traits and experiences play an important role in education because student learning should be both

positive and appropriately challenging (Margolis & McCabe, 2004).

An important idea in the field of positive psychology is flourishing (Ambler, 2006). As Seligman (1998) noted, positive psychology's focus is to make the lives of all people rewarding and to build positive experiences. Seligman's focus of positive psychology can assist faculty, staff, and administrators in fulfilling their mission to help students flourish in college. Ambler (2006) also posits that higher education professionals have a duty to help all students reach their potential by creating environments designed to foster learning. Through applying principles of positive psychology, higher education practitioners can help improve self-esteem, self-concept, and self-efficacy among college students (Pajares, 2001). This applies also to college students with disabilities because positive psychology centers on the strengths and learning styles of all students (Gable & Haidt, 2005).

Challenges of ADHD and LD in College

College students with ADHD and LD have begun to receive more attention in higher education research because of the increased number pursuing a college degree (Weyandt & DuPaul, 2008). It is important to note that “undergraduates with ADHD are often at risk for becoming overwhelmed by new academic and organizational demands as they transition to post-secondary campuses” (Parker, Hoffman, Sawilowsky, & Rolands, 2011, p. 115). However, the research on college students with ADHD is limited. In addition, many students with LD choose not to report their disability, and there are no mandated processes in higher education for identifying or servicing students with disabilities who do not self-disclose (Tincani, 2004). Students with ADHD and, in particular, students with LD are often described as “invisible scholars” (Stage & Milne, 1996). Faculty are often unable to determine whether a student has one or both of these disabilities, particularly because many students are adept at concealing them. If a student chooses not to self-disclose his or her disability, it often remains hidden. This can be detrimental to their learning experience because many students with ADHD and LD struggle in college, and often struggle on their own.

Students with ADHD and LD frequently have lower grade point averages, more academic problems and are more likely to face the possibility of academic probation than other college students (Weyandt & DuPaul, 2008). In addition, they are less organized and have fewer study skills than their peers. Students with ADHD in particular have a very difficult time sustaining attention. According to Weyandt and DuPaul (2008), the ability to sustain attention is the best predictor of college student grade point average. Frazier, Youngstrom, Glutting, and Watkins (2007) found that a student response inventory paired with a parent response inventory of inattentiveness and impulsivity reliably predicted student grade point averages by the end of the first year in college. In that study (Frazier et al., 2007), students with higher scores on the inattentiveness measure were more likely to have a lower grade point average. Students with ADHD and LD not only have processing difficulties and functional limitations, but also the stigma of having a disability that may prompt them to devalue their own achievements, even when those are significant (Reiff, Gerber, & Ginsberg, 1993).

Hanafin, Shevlin, Kenny, and Neela (2007) conducted an ethnographic study to learn directly from

individuals with LD about their college learning environments and experiences. Several important concepts emerged from their research. First, they found a student’s attitude about learning and his or her behavioral characteristics significantly impact college experiences. Second, they found a student’s self-perception to be the most important factor for success in academics. Their research also showed that the negative attitudes of peers and faculty play a large role both in academic success and satisfaction with the college experience. Some students in this study (Hanafin et al., 2007) reported that their peers felt they used their disability as an excuse and a tactic to receive preferential treatment. The negative self-perception and negative attitudes of others led many of the students to feel inadequate to the extent they were not comfortable participating fully in class activities. Faculty who understand this could apply positive psychology principles, which promote hope, optimism, and optimal human performance (Ambler, 2006) to substantially reduce these negative perceptions and their impact on students with LD, helping to improve overall self-efficacy.

Current research shows that college students with ADHD have a difficult time with both attention and interpersonal relationships (Weyandt & DuPaul, 2008). It is important for higher education professionals to understand their need for accommodations. According to Weyandt and DuPaul (2008), some of these include books on tape, increased time for exams, alternative exam forms, and adaptive technology. However, some instructional technology may be new or unfamiliar to students with ADHD and LD, causing high anxiety (Parker, White, Collins, Banerjee, & McGuire, 2009). Further challenges for these students include the need for additional time to complete assignments. Many students with ADHD and LD “forsake other learning opportunities, such as attending a lecture, to allow more time to read required course materials” (Hanafin et al., 2007, p. 438). Heiman (2006) found that students with LD often graduate one year behind their peers and have difficulty with regulation (i.e., self-motivation and time-management).

A pressing issue that college students with ADHD and LD face is faculty who are reluctant, or even unwilling, to accept alternative assignments from or provide special assistance to students with these disabilities (Vance & Weyandt, 2008). In addition, many faculty fail to understand the need for accommodating

students with “invisible” disabilities like ADHD and LD (Buchanan, St. Charles, Rigler, & Hart, 2010). Buchanan et al. (2010) also found that younger faculty (<40 years old) were less tolerant and did not consider the common accommodations for students with both ADHD and LD, such as allowing more time to complete tests and assignments, to be appropriate. Although many students do not self-report disabilities in college, for those who do, it is problematic when faculty members do not feel the accommodations are necessary or appropriate.

A very challenging issue for students with ADHD and LD is the typical lecture-style format of most college classes. Students are required to take notes while listening to a lecture for approximately 50 minutes. This can be difficult for students with information processing and/or attentional disorders because they lack the metacognitive skills needed to receive information, evaluate it, select what is important, and produce a written summary within a matter of seconds. In addition, students are expected to progress at basically the same rate during the semester (Tincani, 2004), which is highly unlikely for struggling students. The negative impact one would expect these challenges to have on the self-efficacy of students facing them can be countered by a deliberate and focused positive psychology approach. As Seligman and Csikszentmihalyi (2000) note, positive psychology “is about nurturing what is best; and understanding and fostering interpersonal skills, hope, and perseverance” (p. 7).

Positive Psychology and Self-Efficacy

This article discusses the importance of increasing self-efficacy, and therefore increasing academic success, of college students with ADHD and LD through the paradigmatic lens of positive psychology. It also discusses ways higher education practitioners can use positive psychology to improve academic self-efficacy. It is important to note that research is limited on the application of positive psychology in college settings. Since this is a relatively new field, this article suggests ways that positive psychology could be incorporated into existing practices for college students with ADHD and LD.

Seligman (2007) defines positive psychology as “the study of positive emotion, of engagement, and of meaning, the three aspects that make sense out of the scientifically unwieldy notion of happiness” (p. 266). Self-efficacy has been defined as a person’s belief in his or her abilities (Bandura, 1997). Self-efficacy plays a

role in the way people feel, think, behave, and motivate themselves. According to Bandura (1997), people with low self-efficacy tend to doubt their capabilities and often avoid circumstances where they think they will fail. Using Bandura’s theory of self-efficacy, one can infer that learners who have experienced numerous academic failures will have low self-efficacy in this domain (Margolis & McCabe, 2004). Self-efficacy is synonymous with what positive psychologists have termed “subjective well-being” (Diener, 2000). Diener (2000) describes subjective well-being as the way people feel about their lives and the quality of their experiences. Self-efficacy and positive psychology both seek to evoke human strengths such as optimism, perseverance, and interpersonal skills (Seligman & Csikszentmihalyi, 2000).

The degree and direction of self-efficacy impacts students in several ways. According to Jackson (2002), self-efficacy influences the environment in which students choose to place themselves and how they handle failures. Students with low self-efficacy tend to avoid learning experiences where they feel inadequate and become frustrated when faced with the possibility of failure (Pajares, 1996). Higher education professionals can use the field of positive psychology to improve levels of self-efficacy by creating positive learning environments and focusing on students’ strengths.

Another way of improving self-efficacy through the use of positive psychology is to increase the student’s feeling of authenticity. Pajares (2001) defines authenticity as the belief that “one’s achievement/success is deserved” (p. 28). Using this definition of authenticity, student success is directly impacted by the belief of personal success or failure (Bandura, 1986). Many struggling learners often have “low rather than high self-efficacy for academics” (Margolis & McCabe, 2004, p. 241).

This article focuses on two categories of college students who may also struggle with learning: those with ADHD and those with LD. Taken together, students reporting one or both of these disabilities form the largest segment of students receiving disability services on college campuses. Tincani (2004) notes LD are the largest category of disabilities reported by students receiving services in college – approximately 29%. According to Weyandt and DuPaul (2008), the numbers of college students with ADHD are less precise, but it is “estimated that 25% of students receiving disability support receive services for ADHD” (p. 312).

Although people with LD or ADHD are generally of average or above-average intelligence, and college students with ADHD show greater ability than people with ADHD in the general population (Frazier, Youngstrom, Glutting & Watkins, 2007), these students typically do not believe that they can succeed academically and often “fail to make appropriate efforts to master academics” (Margolis & McCabe, 2004, p. 241). In short, they do not believe they deserve success.

Students with LD may have one or more of the following difficulties: dyslexia or other reading problems; dysgraphia, which can include difficulties ranging from forming letters and spelling to organizing thoughts in written work; and dyscalculia, which can include math procedural difficulties, semantic memory problems, and difficulty forming or recognizing numbers (Turnbull, Turnbull, & Wehmeyer, 2010). Students with LD may also exhibit problems with memory, whether short-term, long-term, or working memory. Turnbull et al. (2010) also note these students can struggle with certain executive functions, such as organizing, prioritizing, and evaluating academic work. People with ADHD are usually described as having one of three types of attention difficulties: predominantly inattentive, predominantly hyperactive and impulsive, or combined inattentive/hyperactive (Turnbull et al., 2010). Attention deficit hyperactivity disorder adversely affects a student’s academic achievement because it causes difficulties with memory, executive functioning, self-regulation, and concentration (Turnbull et al., 2010).

Students with LD or ADHD share some of the same characteristics, primarily in the area of executive functioning. They also usually have demonstrated a gap between intelligence and achievement (Turnbull et al., 2010). This discrepancy can produce frustration with academic work, even in students who decide to pursue postsecondary education, leading to reduced self-efficacy for academics. Table 1 shows the difficulties typically encountered by students with LD and ADHD, listed by those they have in common and those unique to each disability.

Positive psychology is a logical lens through which to view the importance of increasing self-efficacy because research has shown strong connections between academic motivation, success, and positive beliefs (Pajares, 2001). Pajares (2001) notes students with positive self-efficacy toward academics tend to seek challenges while those with negative self-efficacy to-

ward academics choose not to seek challenging tasks because they are afraid of failure. As Margolis and McCabe (2004) discussed for elementary and secondary teachers, if a learning experience is to be rewarding, it is important that academic tasks are at the appropriate level and, to the extent possible, structured to reduce task anxiety levels. This is also important for the college learning experience. Putting the principles of positive psychology into practice, faculty and administrators must create a learning experience that helps students reach their fullest potential. By working to minimize a climate of anxiety and seeking to understand individual differences and difficulties, faculty are utilizing positive psychology to help students improve their self-efficacy toward academics.

It is important to note that self-efficacy is task specific; thus, strengthening self-efficacy for academics requires focusing on specific subject areas where students feel they are not excelling (Margolis & McCabe, 2004). For example, Margolis and McCabe (2004) note students can be strong in one area, such as reading, and lack confidence in other areas, such as mathematics. Therefore, it is vital for higher education professionals such as disability coordinators, counselors, advisors and support services staff to individualize learning experiences for each student.

Students with LD tend to attribute their academic failures to a lack of aptitude and a lack of effort (Tabassam & Grainger, 2002). Scarpati, Malloy and Fleming (1996) found that students with LD attribute success to external factors and failures to internal factors. Zajacova, Lynch and Espenshade (2005) note “the extent to which a person feels confident about his or her competence to handle a given situation affects whether a given task is perceived as stressful or threatening, or as a challenge” (p. 680). Thus, self-efficacy can be predicted to impact coping strategies as well as the perception of external factors.

ADHD is “widely viewed as a disorder of executive functioning” (Parker et al., 2011, p. 115). Salthouse, Atkinson, and Berish (2003) describe executive functioning as “control processes responsible for planning, assembling, coordinating, sequencing and monitoring other cognitive operations” (p. 566). Students with LD also experience significant difficulties with executive functioning. It is important to note that shifting the primary view of ADHD from behavioral to functional requires a change in the way these students are evaluated and treated (Parker, et al., 2011).

Table 1

Difficulties Typically Encountered by Students with LD and ADHD

Learning Disabilities	Shared Difficulties or Characteristics	Attention Deficit Hyperactivity Disorder
Metacognitive difficulties	Average or above-average intelligence	Difficulty sustaining attention
Dyslexia	Gap between intelligence and achievement	Impulsivity
Dysgraphia	High levels of frustration, especially with academic work	Problems with self-regulation
Dyscalculia	Tendency to devalue own achievements	Difficulty concentrating
	Anxiety	
	Need additional time for reading and assignments	
	Memory difficulties	
	Difficulty organizing and prioritizing work	
	Problems with interpersonal relationships	

Note: Characteristics listed are typical but not exhaustive and may not apply to some individuals with these disabilities. Also, this table does not address the difficulties encountered by individuals with multiple disabilities.

Promising Practices

This section will review some emerging practices that can enhance current disability services for college students with ADHD and LD. “Techniques such as differentiated instruction and stepwise learning (e.g., memorizing and drilling), which are often employed in elementary and secondary classrooms, may be helpful to students with disabilities at the postsecondary level (Heiman, 2006; Reaser, Prevatt, Petscher, & Proctor, 2007). However, due to the different environments and expectations in the college classroom, such individualized approaches are often implemented through the disability services office rather than by faculty members (Allsopp, Minskoff, & Bolt, 2005; Parker & Boutelle, 2009).

Another approach is life coaching, a relatively new field which is grounded in behavioral science. The aim of coaching, by definition, is to enhance a person’s self-concept, abilities, and personal interactions (Griffiths & Campbell, 2009). Unfortunately, the reputation of coaching has suffered due to the extravagant claims of popular motivational speakers, many of whom identify themselves as “life coaches” but who do not adhere to sound, evidence-based psychological methods (Green, Oades, & Grant, 2006). When practiced according to professional standards, coaching in its various forms, whether life coaching, executive skills coaching, or academic skills coaching, is one example of how college support services staff can practically apply the tenets of positive psychology.

There are limited examples in the literature of current positive psychology practices on college campuses. Most of the research has focused on adults or adolescent groups (Norrish & Vella-Brodrick, 2009), and of those studies, few include individuals of any age with disabilities. Griffiths and Campbell (2009) conducted a grounded theory study and found that coaching had positive results for adults without disabilities, including enhanced confidence, reinforcement of previous knowledge or skills, and newly formed habits of positive self-coaching. In one of the few studies involving participants with disabilities, Worrall et al. (2010) found that adults with aphasia following stroke benefited significantly from coaching related to goal-setting and adjustment to a new disability. These findings lead Worrall et al. (2010) to argue for shifting current therapeutic practice of speech-language pathologists from a deficit-based treatment focus to one of life coaching based on hope theory and positive psy-

chology. Although the language and communication difficulties experienced by individuals with aphasia differ in cause from those experienced by individuals with certain types of LD, the reported benefits of coaching and positive psychology for those with aphasia are encouraging enough to warrant closer scrutiny and possible application to the needs of individuals with disabilities such as LD and ADHD.

Numerous studies have shown that high levels of hope and motivation among students without disabilities are linked to higher academic outcomes (Norrish & Vella-Brodrick, 2009; Snyder, Lopez, Shorey, Rand, & Feldman, 2003). Additionally, the research has shown for some time that individualized approaches to teaching and assessing students with LD, ADHD, and other disabilities are not only beneficial, but necessary for academic success (Hanafin et al., 2007; Reiff et al., 1993). Therefore, one can infer that individualized coaching grounded in positive psychology would prove beneficial for college students with disabilities.

In 2009, Parker and Boutelle evaluated a program of executive function coaching for college students with LD and ADHD. This program goes beyond the typical study skills workshops, which are already offered by many colleges to students with and without disabilities. Students with ADHD, and those with LD who have similar challenges, need more support in postsecondary education because of the increased demands on their ability to organize, motivate themselves, and self-regulate their behavior. Parker and Boutelle (2009) suggest that common didactic supports, such as instruction in note-taking or test-taking methods, may not adequately address the needs of students who can grasp the academic content but still have difficulties with self-regulation. Executive function coaching is inquiry-driven and contrasts with the didactic tutoring approach. Coaches in this model were trained staff who spent an average of one hour per week with an individual student (Parker & Boutelle, 2009). Rather than a prescriptive framework, which is common in therapeutic counseling, the executive function coach guides the student’s thinking through asking about the student’s preferences, beliefs, and ideas for solutions to particular learning challenges. The coaching model has been found to support self-determination skills and therefore produces more lasting results for participants.

Students who participated in the coaching experience were interviewed after one or two semesters of involvement (Parker & Boutelle, 2009). When com-

paring coaching to other services, students reported that coaching appeals more to them as adults and encourages more responsibility for decisions and actions. Although therapeutic counseling may be needed in some cases, several students felt they had been sent to therapists erroneously and found coaching to be a better fit. Two students also noted that the coaching model was not helpful to some of their friends who wanted more direction and didactic instruction. When describing the benefits of coaching, students mentioned how the service helps them clarify goals and become more self-aware and self-determined. One major benefit is stress reduction, especially as students began to model the coach's inquiries with positive, self-directed inquiries. Therefore, it seems logical that positive psychology, which focuses on optimism, human strengths, well-being, and perseverance, would be a complementary addition for higher education practitioners to combine with the executive function coaching model. Together, these practices could improve ADHD and LD students' overall self-efficacy for academics.

A study conducted by Reaser et al. (2007) found both differentiated study skills instruction and ADHD coaching are needed, stressing that students with ADHD may have problems in school but they do not lack the ability to learn. In that study (Reaser et al., 2007), students with ADHD were compared to students with LD and to students without disabilities. The results showed that students with ADHD may be similar to students with LD in their knowledge of learning skills, but not in their approach to their learning tasks. This is one reason that students with ADHD should not be categorized or treated in exactly the same way as students with LD, a practice that is common in colleges.

It is important to make the distinction between these two disabilities because, as Reaser et al. (2007) discovered, students with ADHD reported levels of time management, concentration, selecting main ideas, and test-taking strategies that were lower than both students without disabilities and students with LD. However, the ADHD group reported scores that, although lower than the group of students without disabilities, were higher than the LD group in four areas: motivation, anxiety, information processing, and self-testing. These findings relate to the framework of self-efficacy in that students with ADHD may not have the same trouble as students with LD in liking classes or finding college to be worthwhile. Their trouble, in

contrast, is optimism and confidence to the point of being unrealistic about their own abilities. It is clear that campus disability providers must treat these two groups of students differently, making sure to tailor services to specific needs (L. Colligan, Director of Disability Services at The College of William & Mary, personal communication, March 7, 2011).

An individualized strategy instruction model that shows promise (Allsopp et al., 2005) was implemented over a three-year period and both quantitative and qualitative data were collected. Although the program operated out of the campus disability support services office, the strategy instructors were graduate students in the department of special education. The study participants were undergraduate students who had either LD or ADHD and were also experiencing academic difficulties; some were on academic probation (grade point average of less than 2.0). The strategy instructor devised an individual plan to help the student with disabilities apply general learning strategies to his or her own particular courses based on a self-evaluation questionnaire of learning skills. The student and instructor met face-to-face, usually weekly, over the course of the semester. At these meetings, the student would model the strategy for the instructor, who would then give feedback.

Allsopp et al. (2005) found that grade point averages were significantly greater the semester following the intervention than the semester before intervention. The qualitative analysis found that one factor related to improvement was the specific nature of strategy instruction. Some students had received generalized study skill instruction, but had been unable to transfer that knowledge to specific course work. The support from the strategy instructor was another factor related to academic improvement for participants. Those students who did not show academic improvement were those who did not independently apply the strategies to their courses. In addition to practicing the strategies, students who experienced academic improvement mentioned critical reflection as a factor for success. Higher education faculty and staff can use the individualized strategy instruction model to facilitate a constructive and challenging learning environment, fulfilling a major goal of positive psychology – to build positive experiences (Seligman, 1998).

Implications for Practitioners

Students with ADHD and LD need to continue to receive the common services and accommodations provided by college offices of disability services (Weyandt & DuPaul, 2008). Some of these are more time for taking tests and completing assignments (Buchanan et al., 2010; Weyandt & DuPaul, 2008), copies of lecture notes (Vance & Weyandt, 2008; Weyandt & DuPaul, 2008), books on tape (Weyandt & DuPaul, 2008), and alternate formats for assignments and assessments (e.g., oral instead of written) (Sireci, Scarpati, & Shuhong, 2005). Common services need not be abandoned when incorporating positive psychology into disability services. This article suggests that incorporating practices of positive psychology can only enhance the current forms of support for college students with ADHD and LD. In addition, services staff need to be aware that ADHD and LD are not identical disabilities; students with one or the other experience challenges in different areas and should receive services specific to those challenges (Reaser et al., 2007). In the same way, students with multiple disabilities, such as ADHD present in a student with LD, need to be evaluated on a case-by-case basis and given the support and accommodations unique to their needs (L. Colligan, personal communication, March 7, 2011).

Training and professional development for faculty regarding the abilities of students with LD and ADHD, as well as the difficulties they face, should be offered on a regular basis (Heiman, 2006). This training could help improve faculty understanding of disabilities. Positive psychology would be a beneficial framework for this training because it can help foster constructive learning environments for all students and increase interpersonal communication between faculty and students. Unfortunately, some faculty at the postsecondary level do not believe students with LD or ADHD should be given more time to complete assignments or the option to submit them in an alternate format (Vance & Weyandt, 2008). However, Vance and Weyandt (2008) also found that a majority of the faculty in their study sample not only believed that training in disability awareness was important, but they were also willing to receive such training. As faculty awareness grows, their willingness to provide the common accommodations listed above hopefully will increase, further promoting a positive relationship with students.

Attention difficulties are a reliable predictor of a college student's grade point average (Frazier et al.,

2007; Weyandt & DuPaul, 2008). Because of the documented positive effect of individualized interventions on GPA (Allsopp et al., 2005; Parker & Boutelle, 2009), we know that students with LD or ADHD can meet the demands of college-level work when provided with the appropriate supports. This suggests that routine screening for attention difficulties would facilitate service delivery to at-risk students so they may receive support before they are referred for academic probation (Frazier et al., 2007). Such screening could be offered to all incoming students on a voluntary basis through a branch of the student affairs office, such as a center for student success. This confidential service also would need to be couched in a framework of positive psychology so both students and staff understand that the goal of the testing is not to discriminate but to improve students' overall college experience and to help them reach their highest potential.

Both faculty and support services staff can use positive psychology to help college students with LD improve their self-efficacy. In the classroom, faculty can help increase a student's self-efficacy by linking new work to recent successes (Margolis & McCabe, 2004). In addition, Tincani (2004) suggests the following strategies: adding notes to the syllabus that encourage students to talk with instructors about any accommodations they need, making sure the syllabus has clear learning objectives and assignment dates, and providing a list of study objectives to help students understand the material to study for tests and quizzes. Peer mentors, coaches, and counselors can also help students reduce anxiety and frustration – impediments to self-efficacy – by systematic modeling and explanation of learning strategies, guided practice with those individualized strategies, and independent practice on the part of the student (Allsopp et al., 2005; Margolis & McCabe, 2004; Parker & Boutelle, 2009). All of these strategies are rooted in strengthening the learning styles of all students (Gable & Haidt, 2005).

In addition to practicing learning strategies, students with ADHD and LD can benefit from a systematic approach to learning about instructional technology (Parker et al., 2009). Technology use for instructional purposes is becoming the norm on college campuses. However, the intricacies of technology use can prove daunting for students with disabilities. Although students routinely use personal technology, such as cell phones and digital music devices, they often are less comfortable with the types of instructional technology

used in postsecondary education such as performing online literature searches (Parker et al., 2009). Parker et al. (2009) also note individualized skill instruction can be applied to technology use with the same benefits as similar targeted instruction in learning strategies.

Finally, support services staff, faculty, and students themselves, can help increase self-efficacy through setting appropriate, realistic academic goals. Margolis and McCabe (2004) recommend that such goals be personally important to the student, achievable, able to be realized in the short-term, and specific. Although faculty and peer mentors may not be trained as executive function coaches, they can nevertheless employ a similar inquiry-based approach when discussing goals with LD or ADHD students. In an inquiry-based approach, the student has more power to decide what is important and how to achieve it than they usually have in prescriptive, authority-based approaches (Parker & Boutelle, 2009). One can infer that using an inquiry-based approach will increase satisfaction, optimism and help them flourish in college, employing the basic premises of positive psychology (Ambler, 2006).

Conclusion

Positive psychology, though a relatively new branch in the field of psychology, shows great promise for educators. As Seligman (1998) notes, positive psychology strives to make life's experiences more rewarding. Higher education professionals have a responsibility to help students reach their fullest potential. In order to do this, they must promote learning environments that nurture and support students and create positive experiences (Ambler, 2006). Using positive psychology to improve students' self-efficacy in academics takes the focus away from impairments and instead strengthens what is sound. Since many students with ADHD and LD have experienced numerous academic failures, using positive psychology can help students and higher education professionals utilize students' strengths to increase academic success. Self-efficacy practices and positive psychology both aim to increase optimism, perseverance, and personal satisfaction. Many counselors and staff in disability support services are already focusing on student strengths to improve academic outcomes; positive psychology can provide an additional, solid base of research literature to assist them. The Positive Psychology Center provides information and resources

for educators through its web site found online at <http://www.ppc.sas.upenn.edu/>.

Some areas that have not yet been addressed in the literature are effects of race, age, and gender on student responsiveness to the executive coaching and positive psychology approaches described in this article. Another factor that needs to be researched is the type of college or learning environment (e.g., two-year, four-year, or online), as this could impact the types of services provided to students with ADHD or LD. Finally, more research is needed to examine the effect of faculty training and increased disability awareness on both the academic outcomes and attitudes toward learning of students with disabilities. If the ultimate goal of higher education is to produce productive citizens, it would be beneficial to conduct further research into the field of positive psychology and to put into practice what is already known. This can only enhance the overall learning experience for students with and without disabilities.

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Building Relationships, Sharing Resources, and Opening Opportunities: A STEM Learning Community Builds Social Capital for Students with Disabilities

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Abstract

This article describes a learning community designed for university students with disabilities in science, technology, engineering, and math (STEM) majors at the University of Southern Maine. The Learning Community (LC) seminar is a credit-bearing class and part of a pipeline of supports and services for high school and college students with disabilities. The current study used a mixed-methods research design to explore the LC from the students' perspective in order to understand what they gained from the course. Analysis revealed that students gained knowledge, skills, access to resources, and social support, all of which are important facets of social capital. Implications for practice and future research are discussed.

Keywords: Disability, higher education, STEM, learning community, social capital

On a September afternoon, eight students settle into what appeared to be a typical university seminar. They arrange laptops, books, and backpacks around themselves and face the instructor as she talks with individual students and prepares for class. Small details, however, reveal that this is a different sort of class. In the back of the room, students freely help themselves to school supplies and snacks. As class starts, the instructor announces the day's topic, "Back in the groove," and each student describes personal challenges and accomplishments as he or she transitions from summer into the school year. While concerns such as getting used to online classes; handling stress; and juggling work, family, and academics are common among university students, it became apparent that these individuals struggle more than others as they talked about "being a slow reader," arranging for tutors, and coming out of a "meltdown." Nevertheless, these students moved on from their challenges as they offered each other encouragement and suggested strategies. The instructor replies, "We will *both* do it, okay?"

This was a meeting of the Eastern Alliance in Science, Technology, Engineering and Mathematics (EAST) Learning Community (LC) seminar, a credit-bearing class designed for university students with disabilities majoring in science, technology, engineering, and math (STEM). The University of Southern Maine (USM) has hosted EAST since 2003. Funded by the National Science Foundation's Research in Disabilities Education (RDE) Program, EAST is one of ten alliances across the country with the mission to increase the number of students with disabilities who enter STEM majors and advance to graduate school or STEM careers. As do other RDE programs, EAST has created a pipeline of supports and services into STEM majors and jobs. As Martin and his colleagues pointed out, however, "the idea of a pipeline is too simplistic for some groups of students, such as those with disabilities." (Martin et al., 2011, p. 286) since students are not simply in or out of the pipeline, but also possibly undecided about their status or likely success in

the pipeline. Therefore, a systemic approach to support for students with disabilities is desirable (Martin et al., 2011) and EAST has accomplished this through a variety of opportunities such as undergraduate STEM research experiences, tutoring, summer institutes, mentoring, and the LC itself.

It is well documented that individuals with disabilities have lower rates of persistence in college as well as low rates of participation in graduate study and professions in STEM (National Council on Disability [NCD], 2004). Many individuals with disabilities enter postsecondary education with poor academic preparation and self-management (Baer & Flexer, 2007; NCD, 2004). These individuals often need higher levels of self-determination to navigate the student-directed college environment, wrestle with issues of disclosure, understand their own support needs, and advocate for accommodations (Brinckerhoff, McGuire, & Shaw, 2002; Thomas & Getzel, 2005). Due to this combination of factors, individuals with disabilities often enter college ill prepared to progress (Heiman & Precel, 2003). Once in postsecondary education, students with disabilities often report encountering negative attitudes from faculty and peers and are even explicitly discouraged from continuing (Moon, Utschig, Todd, & Bozzorg, 2011).

Supporting all students to be college or career-ready when they graduate from high school and improving postsecondary outcomes are two major foci of national educational policy today. The importance of these goals is emphasized by the fact that individuals who have attended at least some college earn, on average, 26% more than those with just a high school diploma (Center for Law and Social Policy, 2010). Furthermore, increased attention has been paid to maintaining the United States' global competitiveness, especially in STEM fields (American Association of Colleges for Teacher Education, 2007; Hurtado, Cabrera, Lin, Arellano, & Espinosa, 2009). For students with disabilities, however, these outcomes continue to be a challenge and attention needs to be devoted to effectively improving postsecondary outcomes and broadening participation in STEM fields.

One promising practice is the creation of learning communities. Learning communities are intentional, collaborative groups that work toward a common purpose and may lead to the creation of new knowledge and other positive results for individuals and the group itself (Kilpatrick, Barrett, & Jones, 2003). Learning

communities have been shown to enhance curricular coherence, support student learning, and create an enhanced sense of community in postsecondary environments (Shushok & Sriram, 2010). Learning communities have been found to have a positive effect on six-year graduation/retention rates and postsecondary outcomes for students who start out as non-STEM majors (Whalen & Shelley, 2010). Research reveals that learning communities increase the number of courses passed, credits earned, and promote faster completion of developmental course requirements among students in community colleges (Scrivener & Coghlan, 2011; Weissman et al., 2011). Finally, learning communities have been found to have positive influences on minority students' attitudes, learning experiences, and intrinsic motivation (Freeman, Alston, & Winborne, 2008). There is, therefore, a growing body of research indicating positive effects of learning communities for students who are new to postsecondary education, academically underprepared, or who share common identity markers. With these outcomes in mind, learning communities are being created for students with disabilities (Do-IT, 2010-2012; Izzo, Murray, Priest, & McArrell, 2011) and even the faculty and staff who support them (Access STEM, 2008). The impact of learning communities on students with disabilities, however, is just beginning to be explored.

One theoretical framework through which to view learning communities and interpret their impact on participants' lives is the notion of social capital. Social capital has been defined as accumulated interpersonal commodities such as trust, reciprocal relationships, community membership, and other behaviors that allow individuals to act collectively (Bourdieu, 1986; Putnam, 1995). Conversely, individuals or groups who lack social capital often lack the resources and power to participate in larger communities or dominant cultures.

In the fields of disability services and vocational rehabilitation, social capital has become a framing concept for initiatives designed to increase the community-based employment and inclusion of individuals with disabilities (Curran, 2008; Devine & Parr, 2008; Zimmerman, 2008). Increasing the social capital of individuals with disabilities may increase the likelihood that they "are 'of' the community, not merely in the community" (Williams, 2008, p. 159). Furthermore, social capital of the individuals with disabilities is enhanced as their valued contributions to the wider community accrue and are recognized (Parris & Granger, 2008). This article describes

a learning community designed for university students with disabilities in STEM majors while investigating a broad research question: In what ways does participation in the learning community contribute to the social capital of participants?

Methods

We explored the EAST LC from the students' perspective in order to understand what participants gained from the course. We employed a mixed-methods research design that utilized a body of descriptive quantitative and qualitative evaluation data from three years of LC implementation. This research design was particularly appropriate to our purpose, which was to understand the LC experience from the students' perspective. In this section, we describe the structure and organization of the EAST LC itself, the sample of students who participated, the tools used for collecting evaluation data, and the analysis carried out in this investigation.

The EAST Learning Community

The EAST LC seminar is an elective variable-credit course offered both fall and spring semesters that meets once a week and is open to students who are considering or have chosen STEM majors. While designed to support students with disabilities, it is not necessary that students register with the Office of Supports for Students with Disabilities prior to enrolling in the LC. The content of the EAST LC focuses on academic supports, self-advocacy and self-determination skills, addresses disability-specific concerns and topics, and explores opportunities in STEM careers. As students make progress in their undergraduate careers, seminar topics also include applying to graduate school, resume and cover letter writing, presentation, and interview skills. Students typically enroll in the LC for more than one semester. Returning students take on mentorship roles as they share advice and experiences.

Sample

Between spring 2009 and fall 2011, a total of 60 students participated in the LC seminar and 43 have completed both pre- and post-seminar surveys. Twenty-four (56%) students have taken the LC more than one time and seven (16%) have taken it three or more times. In addition to the LC seminar, 51% of the students participate in EAST-funded tutoring on

a regular basis and 21% participate in undergraduate research fellowships sponsored by EAST. Of the 43 participants who completed the LC seminar, 11 are female and 32 are male. Participants' grade levels were diverse: freshmen ($n = 8$), sophomores ($n = 10$), juniors ($n = 5$), seniors ($n = 18$), graduate students ($n = 2$), and 14 had not formally matriculated. The majority of the students indicate their race as Caucasian with only 4% and 1% identifying as African American and Native American, respectively. Although 28% of LC participants chose not to disclose or did not give permission to report their disability status, the remaining 72% of the participants have a range of disabilities. Most commonly (35%), they report either attention deficit disorder/attention deficit hyperactivity disorder or learning disabilities. The rest of the participants reported a range of disabilities including medical or health related disabilities (12%), psychiatric/emotional disabilities (11%), Autism spectrum (7%), and orthopedic disabilities (4%). Finally, 2% of students report being deaf or hard of hearing and 2% report having a traumatic brain injury.

Data Collection Tools

Data for this investigation came from three years of pre- and post-seminar surveys in which students rated and wrote about their expectations and outcomes from the course. We complimented survey data with a focus group with current LC participants, which included an online discussion forum. The discussions allowed us to probe more deeply into emerging themes that had not been fully articulated in the survey instruments.

Survey instruments. The pre- and post-seminar surveys were developed collaboratively by EAST staff and project evaluators in order to capture a range of variables related to the learning community, student outcomes, demographics, and provide program feedback. The survey development process included peer review and pilot testing. The final questionnaires were delivered and monitored online via Survey Monkey by contracted program evaluation staff at the Education Development Center, Inc. (EDC). The pre-seminar survey asked how students learned about the seminar and provided open-ended options to (a) describe their reasons for signing up and (b) their expectations for involvement. Prior to participating in the seminar, participants were also asked to check possible benefits from a given list of 22 items. They were asked to rate their interest in STEM careers, academic preparedness,

and confidence in STEM on a 5-point scale (from “not at all” to “a lot”).

The post-seminar survey mirrored the pre-test in the following ways. Participants were asked to rate the extent to which they achieved the same 22 expected benefits on the pre-test on a 5-point scale. Students were asked again to rate their interest in STEM careers, academic preparedness, and confidence to succeed in STEM on the same 5-point scale. The post-seminar survey also included an open-ended item that asked participants to list 2-3 key things that they had learned. Complete copies of the surveys are available online at <http://cct.edc.org/surveys/EAST/lcs.html>.

Focus group. A focus group of current LC students was conducted in order to supplement the survey data. The EAST co-principal investigator who was unknown to LC students conducted the focus group. The discussion lasted approximately one hour and was recorded and transcribed. The focus group discussion was guided by a protocol that asked students to describe the LC to others who were unfamiliar with it, examples of skills and knowledge learned, and the benefits of the learning community. An online discussion forum was created in the LC Blackboard website in which students responded to questions regarding technology supports, examples of opportunities and resources at the university, how EAST matched them individually with appropriate supports and opportunities, and what they feel they have contributed to the LC as whole or to specific members.

Analysis. The goal of our analysis was to uncover latent themes in participants’ ratings of survey items, answers to open-ended items, and discussions. We recognized that while our surveys were a useful tool to gather data on common items from all LC participants across three years, they were also limited in depth and opportunities to probe for meaning (Hubbard & Power, 2003). We therefore complimented the surveys with discussions, in person and online, to confirm themes and enhance the richness of our data (Creswell, 2009). Although our data was both quantitative and qualitative, we used the steps of data reduction, display, and conclusion drawing recommended by Huberman and Miles (1994) for both data sets.

Data reduction. Quantitative survey data were reduced across years in order to gain a general sense of participants’ beliefs in the possible benefits of the LC, their mean level of interest in STEM careers, and a sense of their own academic preparedness and

confidence in STEM prior to participation. Data from post-LC surveys was also reduced to item frequencies and means across three years. Qualitative data from open-ended survey items as well as discussion groups was read and condensed through a coding process that identified common ideas and themes in the data (Coffey & Atkinson, 1996).

Data Display. Once reduced to item frequencies and means across the three years of LC implementation, quantitative data were displayed in tables that allowed the researchers to order, sort, and categorize the items. The researchers compared pre- and post-LC survey data, identified priorities, and examined the items themselves to identify themes through content analysis. Similarly, coded qualitative data from open-ended items and discussions was displayed in tables and sorted to look for similarities and distinctions across code categories.

Drawing conclusions. By examining pre- and post-survey data and connecting discussion data to open-ended survey items, we arrived at our conclusions through what Creswell refers to as a “confirmatory triangulation design” (2009, p. 210). We identified and confirmed themes from multiple perspectives and data sources. As the recurrent themes emerged we more fully interrogated these themes by grounding them in the literature on social capital (Corbin & Strauss, 2007). In general, our methods elucidated dimensions of social capital as it developed in the LC that can be explored in more targeted ways in future research.

Findings

Analysis revealed that students gained knowledge, skills, access to resources, and social support, all of which are important facets of social capital. Individuals came to the LC through an array of channels typical of how students find and enroll in classes, such as university advising staff, professors, faculty advisors, and/or friends. They were referred to and ultimately chose to enroll in the EAST learning community primarily because of their academic struggles. Nevertheless, despite their history of difficulty in school, students were optimistic about what the LC could offer them. As one student participant noted, “Learning new skills is always difficult but the skills I will learn in this class will help me become a better learner.”

Anticipating the Learning Community

While each individual LC participant had their own expectations for the class, we interpreted the number of times a possible benefit was checked as a measure of the group's overall priority. We then organized priorities into high (chosen by 56-73% of students), moderate (46-55%), some (36-45%), and low (23-35%) categories (See Table 1).

High priorities. As shown in Table 1, the highest priorities for students were improved academic outcomes such as grades (73%), study habits (67%), and time management (57%). This aligns with students' open-ended responses on the pre-seminar survey. Overall, fifty-one qualitative comments related to study skills; tutoring, including help with homework and assistance with content, writing, and math; and organizational or time management skills. Students acknowledged that they needed help "keeping up" as well as getting and staying "on track." One participant identified "a tendency to fall behind and give up."

The most frequent content areas that were identified as challenging involved quantitative reasoning required in math, chemistry, and physics courses. Some students also said that they needed help with writing. Finally, students often generally summarized their goals or reasons for enrolling in the LC as wanting to become a "better learner," "increasing my potential as a student," or as one student poetically phrased it, "to fine tune and oil the mechanics of being a successful person in whatever endeavors I pursue."

Although all of the students in the LC struggled academically at one time or another, only five respondents to the pre-seminar survey specifically cited the need for disability-related help as their reason for enrolling in the class. One, for example, said "the class would help me deal with my learning disabilities in a healthy and effective way." Another thought that the LC would provide help "managing my learning disabilities or how to start the process."

Also in the high priority category is exploration of career goals (57%). In the open-ended question asking why they enrolled in the LC, 17 respondents appreciated the fact that the class was comprised of other STEM majors and saw the seminar as an opportunity to build professional networks. Although some students' future orientation lacked specificity (e.g., "a way to plan for the future," "post graduation stuff"), others were focused on employment (e.g., "how to survive and thrive in a career environment" and "job paths").

Overall, these high priority benefits reflect students' academic self-knowledge and the fact that they are at an exploratory stage in their career paths.

Moderate priorities. In the moderate priority range, we still see a focus on academic support (clarify learning goals, 47%; help balance academics with other responsibilities, 47%; and assistive technology, 50%) as well as career exploration, which is more specifically framed as "learn more about opportunities for research and employment in STEM" (53%). In this category, however, we also begin to see some interest in building social connections (make friends/increase social support, 55%; increase connections with USM professors and staff, 50%). In the open-ended question, 15 students cited connections with other students or faculty and networking as a reason to enroll in the LC. The LC was seen as a place where student had "lots of things in common." They anticipated that this group would offer personal support by being "compassionate" and they wanted to "participate in a student community, which ... addresses concerns and insecurities." One student even thought that he/she could provide help to "other members of the class." Students hoped that social connections with students and faculty would contribute to their professional development.

Career exploration and social connections are outcomes that we continue to see in the "some priority" category. Forty-five percent of students checked "learn about careers in STEM" and 38% checked "increase peer (student-student) academic support network/increase collaboration with other students" as well as "increase connections with EAST staff." Students also indicated that they had hoped the LC would help them become more aware of and navigate resources both in EAST and USM in general (40%). Eleven students commented that the EAST LC would open doors to resources and opportunities at USM and beyond, including assistive technology, tutoring, undergraduate fellowships, research grants, internships and other "opportunities that I might have otherwise missed." Finally, 38% of students checked "develop a personal plan of action."

Table 1

Learning Community Participants' Priorities of Possible Benefits (N=60)

Possible Benefits of Learning Community	Frequency	%	Priority
Improve grades in coursework	44	73	High
Improve study habits	40	67	High
Clarify career goal(s)	35	58	High
Improve time management skills	34	57	High
Learn about STEM fields	34	57	High
Make friends/increase social support	33	55	Mod.
Learn about USM STEM facilities and/or research work	32	53	Mod.
Learn about opportunities for research and employment in STEM	32	53	Mod.
Learn about assistive technologies/other devices to help me learn	30	50	Mod.
Increase connections with USM professors and staff	30	50	Mod.
Clarify learning goal(s) and help balance academics with other responsibilities	28	47	Mod.
Learn about careers in STEM	27	45	Some
Learn about and help navigating USM services	24	40	Some
Learn about EAST programs and services	24	40	Some
Develop a personal plan of action	23	38	Some
Increase peer (student-student) academic support network/increase collaboration with other students	23	38	Some
Increase connections with EAST staff	23	38	Some
Improve self-advocacy skills	21	35	Low
Learn about applying for graduate school in a STEM field	21	35	Low
Learn about other resources and services (not related to EAST or USM)	21	35	Low
Help with the transition to graduate school in a STEM field	14	23	Low

Learning in the Learning Community

After each semester in the EAST LC seminar, participants were asked to complete a questionnaire that mirrored the pre-seminar survey and probed what students felt they gained. One student wrote, "Originally I needed it for my schedule and then it just happened to be exactly what I needed to succeed with my studies." The post-seminar survey asked students to report the extent to which the LC helped them with the same list of outcomes that were listed as possible benefits prior to their LC participation. They rated these items on a 5-point likert-type scale from 1 (not at all) to 5 (a lot). All of the 22 possible outcomes had a mean rating of 2.71 or higher

indicating that EAST helped students in all but one area to at least some degree (see Table 2). Findings from both the post-seminar survey and focus group reflect four major themes: (a) actively connecting students to resources, (b) skill development, (c) social support, and (d) lessons students learned about themselves.

EAST staff actively connecting students to resources. Overall, students found that (a) they built positive relationships with EAST staff and (b) staff were critical in increasing students' awareness of and helped them take advantage of opportunities and supports. The highest rated outcome was "increased connections with EAST staff" (mean = 4.38). This

Table 2

Students' Perceived Gains

To what extent did the Learning Community seminar help:	Mean Rating (N=43)
Increase connections with EAST staff	4.38
Learn about assistive technologies and other devices to help me learn	4.24
Learn about STEM fields	4.16
Learn about EAST programs and services	4.10
Learn about USM STEM facilities and/or research work	4.07
Develop a personal plan of action	4.02
Improve time management skills	4.00
Clarify learning goals	3.93
Increase connections with USM professors and staff	3.88
Improve study habits	3.81
Learn about opportunities for research and employment in STEM	3.81
Learn about and get help navigating USM services	3.81
Help balance academics with other responsibilities	3.79
Increase peer (student-student) academic support network/increase collaboration with other students	3.79
Learn about other resources and services (not related to EAST or USM)	3.71
Improve self-advocacy skills	3.70
Clarify career goal(s)	3.64
Learn about careers in STEM	3.62
Improve grades in coursework	3.51
Make friends/increase social support	3.51
Learn about applying for graduate school in a STEM field	3.27
Help with the transition to graduate school in a STEM field	2.71

is indicative of the relationships that EAST staff and students share. The open-ended survey items and focus group discussions highlighted these positive relationships. One student said, “The professors in this class are very helpful.” Another student said, “Teachers bring the resources to you.” Furthermore, the relationships resulted in direct benefits for the students. One student said, “EAST team in general has really helped in finding the right tools to get successful in several classes especially in those that are really tough. Chemistry, three times, and the fourth time, I found a good tutor and I was able to pass the class very well.”

One of the critical elements of students’ connections with EAST staff is the extent to which staff members learn about their students and can therefore individualize support. One student wrote, “They helped me pass Chemistry by finding me the right tutor, and providing study periods where I could focus on my work without distractions. They also helped me improve my resume, and even got me an internship that I am working right now.” Finding the “right” tutor was a combination of someone who knew the content and could individualize instruction. This student’s specific need for a quiet space for studying was something that EAST staff helped him realize and then find.

The second highest post-seminar outcome was “learning about assistive technologies and other devices” (mean = 4.24), which again highlights tangible benefits for students and augment services provided by the university’s Office of Supports for Students with Disabilities. One student wrote, “EAST helps with any accommodations that you need, like assistive technology.” In their open-ended responses, four students listed the technology that they gained from EAST, such as the voice recognition software Dragon Naturally Speaking (Nuance Communications, 2010) and LiveScribe pens (Livescribe, 2010) for recording and note taking. One student noted:

[The LiveScribe pen] is the most effective tool I have come across for recording lectures as well as the simultaneous capture of written note taking and the audio of the lecture in real time. I have been recruited to provide lecture notes to the office of students with disabilities, and this allows internet postings for the entire office to view and hear. It’s amazing.

Three of the outcomes with the highest mean ratings relate to a greater awareness of opportunities,

specifically: “learn about STEM fields” (mean = 4.16), “learn about EAST programs and services” (mean = 4.10), and “learn about USM STEM facilities and/or research work” (mean = 4.07). Participants in the focus group with current LC students discussed learning about “options and things to get involved with at this school. . . . They [EAST staff] bring that to light and we see what we can have at our potential and stuff that can interest us.” More than just pointing out opportunities, however, EAST helped students accomplish the tasks to get involved. One student described his insecurities and worries about applying for research fellowships. With help from EAST staff, he was successful in demystifying the process, pointing out his own accomplishments, and gaining experience. He said:

You become aware of something that you are interested in pursuing an internship, or a fellowship and you look at it and say, “That is really cool; I bet there is a lot of competition. . . . I don’t know how to enter the competition, and if I don’t enter it properly I don’t stand a chance of winning and even if I enter it properly, I don’t stand a chance.” [But EAST staff say,] “Here is a checklist, you have already done three of them; here, that is enough.” I have done two fellowships now. The first one, you are kind of amazed that you got it at all. . . . then the second one, you say, “I can do this; I can do this!”

For this student and others, awareness of opportunities translated into concrete resources such as tutoring, fellowships, and internships. One student wrote, “A degree in a major program does not always equal a job. Internships and cooperative jobs are critical nowadays. I already found a paying internship!”

Skill development. Students rated their academic preparedness on a five-point scale (1 = very poorly to 5 = extremely well prepared) before and after LC participation (see Table 3). Students experienced improvement from pre- to post-seminar in their academic preparedness. Even after participation in the LC, however, students as a group rated themselves only as being moderately to well-prepared in their STEM courses.

Nevertheless, when asked what two or three things students learned in the LC, academic and study skills were by far the most common. Sixteen students cited time management and organizational skills as an important outcome of the course. They specifically

Table 3

Pre- and Post-Comparison of Academic Preparedness for Learning Community Participants (N=31)

How well prepared academically do you feel for courses in the following fields?	Pre Mean	Post Mean
Science	3.26	3.61
Technology	3.32	3.87
Engineering	2.90	2.97
Mathematics	3.06	3.16

wrote about making lists, using calendars, “how to pace myself for...exams and quizzes,” and how “to focus on important events.” Closely related to these organizational skills were study strategies. One student wrote, “I learned from EAST that I personally really benefit from using note cards to help memorize formulas and equations for math, engineering and science.” Three students responded that they worked on and improved their writing skills, which included strategies, communicating in writing, and grant applications. It is interesting to note that most of the skills students cited as having learned were not STEM-specific, but are relevant in any academic context.

Above and beyond academic skills, LC participants reported learning resume building, job seeking skills, and skills related to employment success such as “people communication” and “how to network with people close to me.” A student in the focus group said that skills learned and practiced in the LC were “resume builders and you can bring them into interviews and you can talk about being a part of a community like EAST.” Another student noted learning the importance of “resume language; tone and accuracy can mean the difference between getting interviews and getting forgotten.” Another wrote, “I was walked through setting up a correct and accurate resume, which I then used to apply for a position I had been wanting as a Summer RA on campus.”

Social support. The theme of social support emerges as an outcome throughout the list of benefits gained in the LC. Participants found that the LC helped them “make friends/increase social support” (mean = 3.51). They also found that the LC helped “increase

peer student-student academic support network/increase collaboration with other students” (mean = 3.79). Finally, professional supports such as “connections with USM professors and staff” and “connections with EAST staff” were rated very highly with a mean of 3.88 and 4.38, respectively. Overall, students describe the EAST LC as “very accepting,” “supportive and inviting,” and even “allows you to build a family in your university.” The social support in the LC allowed students to connect “with like-minded students.” The LC became a place where students were not alone in their struggles. Indeed, they found instructors and fellow students in the LC who could help them. A student in the focus group summed this up by saying:

I will very quickly think that I am the only person in the room who is struggling... I am struggling alone. So being able to walk into a room and say, “I am having a hard time with this [is a good thing].” Not only does nobody give you a hard time, but they say, “A lot of people are having a hard time with this, this is hard. But look; you are doing this right, you are doing that right. Let me call someone who may be able to help you.”

Finally, the social support in the LC was more than just a benefit received by members. One student described the reciprocal nature of the social support when she wrote, “Community Lab learning and involvement has helped me reach out to others in need of learning.”

Lessons learned about themselves. In this context of shared experience and support, students felt that they became better students and were more able to succeed on their own. A number of students said that they became more aware of “where I am strong and where I need to improve.” Another student wrote about what it means to be a student by observing, “I’ve learned that being efficient and productive in school has a lot more to do with your study skills and time management than just being intellectual.” Finally, a student found confirmation that she is doing the right thing academically when she wrote, “I received validation that my study and time-management skills are sound and well thought out.”

A student in the focus group used the analogy of a tool box to describe what he gained in the LC. He said:

You open your tool box and you pull out the hammer and pliers and you don’t realize that you are just looking at the top tray...and you pull that out and you are looking at all the power tools you can use. And it is a big eye opener to have that available...look what there is...there is all that!

Some of the skills in the tool box relate to a student’s confidence and self-efficacy. One young woman said:

I have gotten better at demonstrating in other locations because you can come here and essentially shakily test out an extrovert skill or two here just to see how it goes, build some momentum, so that you get confidence so that you can do it on a blackboard in front of a different class that may be more intimidating.

Another student described the therapeutic value of having a place to work on recognizing past patterns of academic struggle with the hope of becoming more proactive in the future. He said:

This almost seems like [an] academic therapy group... Last week we were talking about my pattern, which is, by mid-semester, I’ll feel really discouraged and I will drop the ball for a couple of weeks. So now I know how not to do that, how to anticipate, building coping skills in time management and put the safe guards in place.

Another young woman followed up on this point and said that EAST has been helpful in really understanding the nature of one’s difficulties. She said, “When you are having trouble they usually say, ‘Well, what is the source? Can you pinpoint the source of the problem?’ And they help you do that.” This level of self-awareness and the notion of an academic tool box are necessary for students to ultimately become effective self-advocates. It is interesting to note that prior to participating in the EAST LC, building self-advocacy skills was the second lowest priority for the students as a group. After participating in the LC, however, students felt that EAST had helped them improved self-advocacy skills between “some” and “quite a bit” (mean = 3.70).

Discussion and Implications

In the online follow-up to the focus group, one student wrote:

Everyone in the group has knowledge that has potential value to some other person/s of the group. This pool of knowledge and muscle is accessible to everyone. The group as a whole is more efficient in its function toward a common or an individual’s goal, rather than just a single person, trudging through school on their own.

This statement encapsulates the primary outcome of the learning community: social capital. The learning community itself builds valuable knowledge that is accessible to everyone in the group and collectively greater than any one individual can accrue on his or her own. The development of social capital in a group context such as a learning community may be similar to the development of an individual’s sense of self-efficacy, which can develop through vicarious experiences (observing others) and social persuasion (the influence of others) (Jenson, Petri, Day, Truman, & Duffy, 2011). Indeed, a learning community can provide the context in which one sees others successfully cope and ultimately succeed. The members of the learning community can provide the encouragement and positive influence needed to enhance self-efficacy.

According to Devine and Parr (2008), relationships are the primary mechanisms by which social capital is built in learning communities. First, the students come together and create *bonding* social capital experiences

(Holt, 2010) because of common characteristics or identities. For individuals in the EAST LC, their initial bonds may be based on disability, struggles in school, and commitment to STEM. While time together in the LC created proximity, which “is important to sustaining social capital” (Devine & Parr, 2008, p. 405), merely being in the same space is not sufficient. For social capital to fully develop, trust and reciprocity are needed (Devine & Parr, 2008; Putnam, 1995). Our LC students described trust and reciprocity acknowledging an individual’s trustworthiness to the group. Another participant described the reciprocity of their relationships when he wrote:

I could access the experts’ knowledge, or at the very least speak with someone who knows more about it than me. In return for their help I am ready to provide whatever knowledge I may have... and any muscle or other brain effort that would be helpful to any other group or subgroup.

Our findings also reveal that tangible benefits are an outcome of the LC and are directly related to the social capital of the group. Students translated information and relationships into tutorial services, internships, and technology, which in turn translated into gains in skill and knowledge and further opportunities. Bourdieu (1986) pointed out that, as individuals accrue social capital, they have opportunities to convert this into economic capital. We can see this beginning to happen as students in the LC find paid internships. The potential for this increases as students draw upon their accrued social capital for admission to graduate school and jobs in STEM fields.

Limitations and Future Research

Given the fact that the EAST LC is specifically designed for students with disabilities, it is important to pay attention to what Holt (2010) calls the “dark side of social capital” (p. 18). She cautions that “segregated spaces then, are often double-edged; simultaneously providing a safe space of affirmation and demarking the space and its occupants as different, possibly, although not inevitably, in a negative sense” (Holt, 2010, p. 15). The hope is that not only does a group build bonding social capital, as described above, through internal trust and reciprocity, but also *bridging* social capital, which can serve to span what Putnam (1995) called “underlying social cleavages” (p. 665). We may be seeing the

beginning of bridging social capital when the students use skills and knowledge in classes beyond the LC setting as in the case of the “extrovert skills” described in the focus group. Going forward, it is important to pay attention to mechanisms for greater bridging social capital so that students with disabilities are recognized for their contributions in the larger university and STEM communities “rather than being perceived as only needing help” (Zimmerman, 2008, p. 175).

Another area for future exploration is to more fully understand facilitation strategies that foster social capital. The findings from this investigation reveal the importance of the EAST staff in the lives of EAST students. Teaching and facilitation strategies used by EAST staff appear to successfully build relationships and increase students’ awareness and confidence. It would be valuable, however, to more closely examine the effect of specific teaching and facilitation methods and to pay special attention to how staff members can transfer responsibility for the LC to students as they gain social capital themselves.

Despite the fact that students came to the LC with high hopes for improved academic outcomes, the extent to which they accomplished this goal is not clear. While students reported a wide range of improved academic management skills, they did not report improved grades as a major outcome of the LC. Further exploration of the relationship between EAST participation and academic outcomes is warranted. It may be that the impact of LC participation alone is insufficient for improved grades, but that positive effects are possible when paired with other resources.

Finally, the current study is relatively small and exploratory and therefore contains inherent limitations. While these limitations cause us to narrow the scope of the generalizations that can be made, they point in the direction of future research. It is not possible to draw causal conclusions about the effect of the learning community on student outcomes. In order to capture this relationship, future research should utilize control groups to evaluate changes in social capital variables as well as more narrowly defined outcome variables such as persistence, graduation rates, and post-graduation outcomes. Nevertheless, the dimensions of social capital identified in this investigation will serve to build and refine future research.

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Reasons University Students with a Learning Disability Wait to Seek Disability Services

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Abstract

We interviewed 42 students with a learning disability attending a large competitive state university about their reasons for seeking disability services (DS) when they did and their transition services in high school. Students who sought services earlier performed better academically than students who postponed seeking services. All but eight students first sought services in response to academic crises. Students who were more proactive received more college transition services in high school, while students who sought services later reported limited knowledge as a barrier to seeking services. A highly scheduled freshmen year, a general feeling that things were going well, and a desire to forge an identity free of a disability were also reasons given for postponing services. Implications for transition services at the high school and postsecondary levels are discussed.

Keywords: Transition, college, learning disabilities, disability services, and disclosure

The number of high school graduates with learning disabilities (LD) going on to higher education has tripled in the last two decades. For example, a comparison of the National Longitudinal Transition Study (NLTS) and NLTS-2 found that the percentage of high school graduates with LD who matriculate to postsecondary education within four years of graduation had risen from 11.4% in 1990 to 34.5% in 2005 (Newman et al., 2010). Despite increasing enrollment, the success of these students has been limited (Gordon, Lewandowski, Murphy, & Dempsey, 2002; National Council on Disability, 2003; Palombi, 2000). Nationally, college students with LD have a dropout rate near 70%, and compared to peers without disabilities, obtain lower GPAs, are more likely to take leaves of absence, and tend to change to easier programs that prepare them for less lucrative careers (Anctil, Ishikawa, & Scott, 2008; Henderson, 1999; Horn & Berkold, 1999; Murray, Goldstein, Nourse, & Edgar, 2000; Newman et al., 2010).

Prominent among reasons proposed for this lack of success is the decision by students with LD not to disclose their disability to college personnel to receive services. In

the NLTS-2, only 35.5% of postsecondary students with LD considered themselves to have a disability and had informed their institution of it. A majority (56.7%) did not consider themselves to have a disability, while 7.8% thought they had a disability but chose not to inform their schools (Newman et al., 2009).

A variety of suggestions has been presented in the literature for the decision not to seek services, many of which revolve around issues of stigma. While issues related to stigma are complex, they often involve interpersonal and intrapersonal aspects of feeling misunderstood. Self-misunderstanding (intrapersonal) often manifests as beliefs of being 'stupid' (Cawthorn & Cole, 2010; Ferri, Connor, Solis, Valle, & Volpitta, 2005; Trammell & Hathaway, 2007) or experiencing the imposter phenomenon, which entails feeling inadequate as a college student (Shessel & Reiff, 1999). Interpersonal misunderstanding is also an important aspect of why students may delay or choose not to disclose their disability. For example, students with LD indicate that they fear faculty will believe them incapable of work in a course or major if they dis-

close their disability (Denhart, 2008) and that peers may view them as less intellectually able or trying to “cheat” through the use of accommodations (May & Stone, 2010).

In addition to issues of stigma, other authors (Valentine, Hirschy, & Bremer, 2009) have reviewed the value of transition services in high school. Transition services as outlined in IDEA (2004) Section 300.29 are intended to include a coordinated set of activities implemented by a transition team composed of students, parents, special education and general education teachers, other school personnel, and representatives from other service agencies. A student’s transition plan goals are to be developed by age 16, reviewed annually, and include potential postsecondary education goals. Transition services are also designed to prepare students for self-advocacy and self-monitoring skills they will need in college (Joyce & Rossen, 2006). Studies suggest, however, that many such services fall short in their preparation for postsecondary education. For example, Janiga and Costenbader (2002) found that university disability services coordinators were unsatisfied with both general information students had received about differences between high school and college (e.g., differences in class size, instructional and testing methods) and in areas specific to students with disabilities (e.g., self-advocacy skills, information about their own strengths and weaknesses, and participation in developing their transition IEP). Similarly, Schreiner (2007) found that high school seniors about to transition to postsecondary education had great difficulty providing examples of how their specific strengths and weaknesses might affect their performance in college.

In summary, the literature has identified several important issues that contribute to a student’s decision about whether and when to seek services at the college level. While this decision is complex and highly individualized, key issues related to stigma, knowledge of one’s disability, and quality of transition services appear to be critical. In an effort to understand what influences the decision to seek services at a particular time, we conducted interviews with a group of students with LD in order to explore their reasons for first seeking services as well as reasons for not seeking services earlier. We also asked a number of questions regarding their high school preparation for the transition to college.

Using a mixed methods approach, the present study examined the narratives of students with LD regarding their decisions to seek disability services early or later in their college careers. The first part of the interview, in which student narratives were obtained through open ended questions, addressed two research questions. First, why did students postpone seeking services from the Office of Disability Services (ODS)? Second, what were the precipitating causes for students seeking services when they did? Quantitative data were gathered in the second part of the interview to address the third research question: What kinds of preparation, formal transition services, and knowledge of disability regulations impacted their decision to seek or postpone seeking disability services? We expected to find that those who disclosed their disability and sought disability services earlier would report more preparation for college in general, have more specific knowledge about their own disability status, and express less concern about stigma than those who postponed seeking services.

Method

Participants

Forty-two students who had received IDEA services for a specific learning disability while in secondary school were interviewed during the spring semester at a competitive admissions (mean combined SAT scores = 1150) state university of 19,000 students. There were 23 men and 19 women in the sample, including 15 second year students, 14 third year students, and 13 fourth year students. Students were recruited through three procedures: an e-mail soliciting participation from those registered with the ODS ($N = 14$), recruitment of students taking an Introduction to Psychology course ($N = 11$), and from those volunteering in a peer mentoring program ($N = 17$). The diagnosis of a learning disability and time of initial contact with the ODS were confirmed confidentially by ODS staff. Table 1 provides a description of participant demographics including their year in college, recruitment source, diagnosis and co-morbidity, semester when they first disclosed, and precipitating event for disclosure.

Procedure

Students individually participated in a semi-structured interview using questions that were developed from a phenomenological perspective (Bogdan & Biklen, 2003; Patton, 2002). The interview protocol

Table 1

Participant Demographics

<u>#Sex</u>	<u>Year</u>	<u>Source</u>	<u>Diagnosis</u>	<u>Co-Morbid</u>	<u>Semester Arrived</u>	<u>Event</u>
1M	2nd	ODS	Read		Summer	--
2M	2nd	ODS	Rd/Wr	ADHD	Soph1	Prob
3M	2nd	ODS	Math		Late Fresh 1	GPA*
4M	2nd	Psych	Read	Depress	Early Fresh 1	--
5M	2nd	Psych	Proc		Soph 1	Time
6M	3rd	ODS	Reading		Soph 1	Prob
7M	3rd	ODS	Memory		Soph 2	GPA
8M	3rd	ODS	Read	ADHD	Junior 1	Prob
9M	3rd	Psych	Mem		Junior 1	Prob
10M	3rd	MENT	Math		Fresh 2	F-test
11M	3rd	MENT	Writ		Junior 1	F-test#
12M	3rd	MENT	Mem	ADHD	Fresh 2	GPA
13M	3rd	MENT	VisProc		Junior 1	Time
14M	3rd	MENT	Read	TBI	Fresh 2	F-test
15M	4th	ODS	Writing		Junior 2	Prob
16M	4th	ODS	Writ		Late Fresh 1	F-test
17M	4th	MENT	Re/Wr	Anxiety	Junior 2	F-test#
18M	4th	MENT	Math		Fresh 2	GPA
19M	4th	MENT	Memory		Summer	--
20M	4th	MENT	Math		Soph 1	Prob
21M	4th	MENT	Re/Wr	ADHD	Soph 2	GPA
22M	4th	MENT	Writ		Junior 1	GPA@
23M	4th	MENT	Read		Fresh 2	GPA
24M	2nd	ODS	Read		Soph 1	F-test
25M	2nd	ODS	Read		Fresh 2	GPA
26M	2nd	PSY	Writ	Depress	Summer	--
27M	2nd	PSY	Math		Soph 1	GPA
28M	2nd	PSY	Process		Early Fresh 1	--
29M	2nd	PSY	Read	Depress	Fresh 2	GPA
30M	2nd	PSY	Read		Late Fresh 1	F-test
31M	2nd	PSY	Read	Anxiety	Soph 1	GPA^
32M	2nd	MENT	Writ	ADHD	Soph 1	Prob
33M	2nd	MENT	Math		Summer	--
34M	3rd	ODS	Mem		Soph 2	GPA@
35M	3rd	ODS	Read	ADHD	Junior 1	F-test#

(Table 1 Continued)

36M	3rd	ODS	Process		Soph 1	GPA
37M	3rd	PSY	Math		Early Fresh 1	--
38M	3rd	PSY	Mem		Summer	--
39M	4th	ODS	Read		Junior 1	GPA
40M	4th	MENT	Re/Wr	Depress	Junior 2	Time
41M	4th	MENT	Math		Fresh 2	GPA
42M	4th	MENT	Read		Soph 2	Prob

Note: Year = academic class at the time of the interview; Group = method a recruitment (ODS, psychology subject pool. Or mentoring program (MENT); Diagnostic categories = reading disability (Read), writing disability (writing); mathematics disability (math), reading and writing disability (Re/Wr), memory (Mem), visual processing (VisProc); Comorbid diagnosis = none (blank); semester arrived at ODS = if prior to matriculation the category is summer; reason given for seeking services, F-test indicates failing a test, prob = being placed on academic probation.

*mid-term GPA; #failed critical test in major; ^GPA too low to pledge sorority; @ low GPA for major.

was designed to allow the participants to tell their stories as they subjectively experienced them with a minimal number of leading questions from the researcher. The phenomenological perspective attempts to maximize understanding of an individual's constructions of experiences (Mertens, 2010). This was selected as the most appropriate approach for this study in order to gain information that could shed meaningful light on students' decisions to seek ODS services in a timely manner. The interviews included prompts in seven areas: (a) when they first went to ODS, (b) why they went at that time (and not before), (c) their knowledge of and involvement in the IEP process in high school, (d) their recollection of the nature of their school-based transition programming, (e) other sources of information about the transition to college, (f) special education services they had received in high school, and (8) their understanding of the laws that govern college services. Students also brought a copy of their college transcript to the interview. The interviews were audio taped and verbatim transcripts were made with two exceptions: names of individuals, schools, and school districts were omitted and two participants preferred that only notes be taken. Interviews lasted between 15 and 45 minutes. The interview questions are included in Appendix A.

Analysis

We used a mixed methods approach to analyze the data in this study. Most of the information was compatible with quantitative analyses (e.g., when they had first gone to ODS, GPA, whether they had been to an IEP meeting), while the narratives of their decision to seek assistance from ODS (questions 2 and 2b) were treated qualitatively. Each response was independently coded by two individuals. The data that were treated quantitatively were scored according to predetermined themes. For individual items the rates of agreement ranged from 89% to 100%. Differences were resolved by conference among the raters and the fourth author.

An iterative process was used to code the two questions that provided the narratives for the students' decision to go to ODS. Most of the responses to question 2 (What prompted you to go to ODS?) were short and over 90% involved academic problems. The raters agreed that a classification based on individual test performance, overall GPA, and being placed on academic probation captured these data sufficiently. Agreement on classifications was 98%. A set of themes drawn from the literature review on barriers to seeking service were used to code the responses to question 2b (Why did you not go to ODS before that?). These

themes included: (a) lack of knowledge of services, (b) desire to establish an identity independent of disability status, (c) feelings that ODS assistance would be regarded as “cheating,” and (d) feelings of shame. The first coding iteration used only these categories and an “other” category. Agreement at this point in coding at the level of sentences was 95%, but 41% of the 658 sentences were coded as “other.”

The second iteration used four additional themes that emerged from the data: lack of time, the hassle of being assessed, having conflicts with ODS scheduled hours, and a general feeling that things were going well enough. A second coding produced a 96% agreement, with only 1% of the responses coded as “other.” In a discussion among the coders, it was decided to break down the category of “lack of information” into three subcategories (see below). These subcategories resulted in a 98% agreement.

Results

The first survey question was used to categorize participants into three groups based on when they first sought assistance from ODS. Eight students (19%) registered with ODS before classes began or during the first weeks of their first semester (early group); 11 (26%) sought services later during their freshman year, most during the second half of the first semester or at the beginning of the second semester (later freshman group); and 23 students (55%) waited until after their freshman year (late group).

The GPA differences among the three groups at the end of their first semester were non-significant, with those in the early group earning a mean GPA of 2.20 ($SD = 0.34$), those in the later freshman group earning a mean GPA of 2.04 ($SD = 0.57$), and those in the late group earning a GPA of 2.09 ($SD = 0.41$). By the end of the first semester of the sophomore year, however, the effectiveness of participation in services from the ODS is suggested by the mean cumulative GPAs of 2.64 ($SD = 0.37$) for the early group; 2.30 ($SD = 0.45$) for the later freshman group; and 2.18 ($SD = 0.29$) for the late group, $F(2, 39) = 5.41, p = .01$. Those in the early group had earned an average of 35.9 credits ($SD = 3.47$); those in the later freshman group 33.8 credits ($SD = 3.90$), while those in the late group had earned only 30.2 ($SD = 4.14$) credits during their first three semesters, $F(2, 39) = 5.05, p = .02$.

The second survey question requested information about what prompted students to make their initial contact with ODS. In response to question 2, students other than those in the early group indicated overwhelmingly that they first came to ODS in response to academic problems. Of the 11 who came later during their freshman year, four did so in response to failing tests during the first semester, while seven came in response to a low first semester GPA. Of those in the late group, four reported that it was a specific test grade that prompted them, typically a critical course in their major. In addition, 13 students in this group indicated that it was their low overall GPA, including eight who were placed on academic probation. Three students in this group indicated that it was difficulty completing assignments within time limits that prompted their decision; two students indicated that it was not having the requisite GPA to declare their intended major; while one student indicated that it was having a GPA that prevented her from pledging a sorority. In contrast, students in the early group all indicated that they had made initial contact with ODS because it was arranged for them or because they wanted to receive accommodations.

A majority of students in all three groups indicated that others were involved in their decision to seek disability services. Of the eight students in the early group, seven indicated parents played a role in that decision. Five students also mentioned the role of a high school counselor, psychologist, or teacher. Of the 11 in the later freshman group, seven named a parent and two named a course faculty member as playing a pivotal role. In contrast, a faculty member was the most predominant individual reported for those in the late group, including five course faculty and nine advisors. Additionally three friends, two fiancées, and two parents were identified. High school personnel were not mentioned by any students in the later two groups.

The reasons for students not making initial contact with ODS were varied and most students cited more than one reason. Eight themes for a delay in seeking services were identified, four themes consistent with the literature and four additional themes emerging from the narratives. Out of the eight themes, four accounted for large percentages of the reasons: (a) lack of time, (b) lack of knowledge, (c) establishing an identity independent of disability status, and (d) feeling that things were going well/lack of recognition that things were not going well.

Lack of time was mentioned by more students than any other reason. For example, a student who made initial contact with the ODS office at the beginning of the second semester of her freshman year said:

They keep you really busy during the first semester with team-building and orientation sessions, and to be honest, I was overwhelmed with the amount of reading I had to do. And there was a certain amount of partying, too. My roommates and I really got along and we spent hours and hours hanging out, and I kept in touch with all of my friends back home on Facebook. I got involved with a church group. I didn't really track how well I was doing in my classes. I knew I had some bad grades, but I had some good ones, too. It came as a shock when I saw my first semester report card. I had two Cs, two C-minuses, and a D. That was a wake-up call and my parents' reaction was another. So I talked to my advisor and she suggested going to the Writing Center. I told the tutor there that I had a disability and she got me in touch with ODS right then and there.

Lack of knowledge was also often given as a reason for delays in seeking services. For example, a male student with a mathematics disability said:

People told me to go to ODS to get accommodations. I didn't want any accommodations. No one told me about all the other things that they provided, like help with finding the right professor for a course I had to take.

A comment by a senior who delayed seeking services until her junior year captures a different form of lack of knowledge: lack of information about her own disability and its impact on college learning:

I swear no one ever used the term "learning disability" to me in high school. The only advice I had was, 'Don't take too many courses with a lot of writing in them.' What's too many? What kind of writing?

We decided to divide the "lack of knowledge" category into three sub-categories: (a) lack of information about procedures that needed to be followed, (b) lack of information about services provided by ODS, and (c) lack of information about one's disability.

Table 2 reports the percentages of each of these responses for the later freshman and late groups. The percentages are quite similar across the two groups with the exception of the three categories of "lack of knowledge," which were twice as high in the late group as in the later freshman group. An example of a narrative from a male in the late group shows examples of all three forms of lack of knowledge.

I thought that it was a lot of hassle just to get a few minutes extra time on tests, and most of my professors freshman year were willing to give me that without my telling them I had an LD or providing a letter of accommodation. I went to the Writing Center for help on papers, but anyone can do that. Then second semester of my sophomore year I had a professor who wouldn't give me extra time. I told him I had an LD and he told me to go to Disability Services. I thought he was a jerk. Then I found out to get services at ODS I'd have to get tested. I almost didn't do it. When I did, I found out they could help with a lot of issues. Early registration is a great help. I wish I had known I could have had that from the get-go. Tutoring for a specific class by a student with issues similar to mine is a life-saver. And they were able to help me with a dorm situation that was interfering with my getting work done.

Two reasons were found to be common in both the later freshman and late groups: a feeling that things were going well and wanting to establish an identity without disability status. The following example combines the two issues in a student from the later freshman group who was also diagnosed as having ADHD:

I'd read somewhere that LDs go away in some students when they reach adulthood. I was crossing my fingers that I was one of those people. I was really tired of taking tests in a room by myself at a special time, usually during study hall. I thought, "Well, I'll give it a shot." My mom encouraged me to do that. I wasn't sure how I was doing. My English papers would come back with comments, but no grades. I made grades in my courses all over the place, but people kept telling me, "Don't worry, you're a freshman. Have a good time." So I didn't worry, and I did have a good time.

Table 2

Percentage of Reasons Given for Postponing Registering with ODS in the Later Freshman and Late Groups

Reason	Later Freshman (N=11)	Late (N=23)
Lack of Time	64	70
Lack of Knowledge		
a. Procedures	27	57
b. Range of Services	27	52
c. Own Disability	18	61
Identity	36	39
Things Going Well	36	26
Cost/Hassle of Testing	0	39
“Cheating”	27	9
Shame	18	17
Scheduling Conflicts	18	17

Concerns about the expense and hassle of assessment were reported as another concern of the students in the late group. This category was less common than the lack of time, lack of knowledge, identity, or things going well category. A student who waited until being placed on academic probation gave this narrative of her continuing delay:

When I finally got around to going, the first time, I was told that I'd have to take a bunch of tests and that it was going to cost me a lot of money. I made an appointment to start the testing, but then I blew it off. The crisis has passed. Next semester I went back. This time I was told I could get temporary accommodations until the testing was over. Maybe they told me that the first time, but I sure didn't hear it. I don't think you should have to pay for this out of your own pocket.

Other themes included feeling that ODS assistance would be regarded as “cheating,” shame, and scheduling conflicts. These were the least frequently mentioned reasons in both the later freshman and late groups.

In response to question 3 asking, ‘Can you tell me what an IEP is?’ all but two students in the late group had basic knowledge of what an IEP was. While more than 90% of students mentioned that the IEP listed accommodations and that it was legally binding, less than a quarter of the students in any group mentioned that it contained a diagnosis. All of the students in the early group recalled attending at least one IEP meeting; seven of the 11 in the later freshman group did so, while only 10 of the 23 students in the late group recalled an IEP meeting.

High school orientations to college and ODS services were clearly different among the three groups (Question 4). Students in the early group all were able to recall general programs about the transition to college. All could recall being told about ODS;

six of the eight recalled individual meetings in which the nature of their disability and its impact on some aspect of college had been discussed. For example, one student reported:

Yes, I met with my case manager and she explained some things about my writing disability and told me to try to limit the number of classes I registered for each semester that had long writing assignments in them. She told me to go to the writing center for every paper and to go to ODS as soon as I got on campus.

Students in the later freshman group recalled less college orientation. Two of the 11 stated that they had no preparation for college; four did not recall being told about ODS; only six had individual meetings about their disability. For example, one student from the late freshman group described his orientation to ODS in this way:

I was told if I ever needed extra time on tests, there was an office on campus that could help me out. The person who told me that gave me her card and told me that there were documents that she would have to send in.

Students in the late group recalled even less transition orientation. Seven of the 23 remembered no college transition provided by the school; 12 did not recall ODS being mentioned; only seven recalled an individual meeting about their disability status and college. The following three responses are instructive. A student who arrived with an Honors Scholarship stated "I had something called a transition class. We just worked on writing job applications, resumes, and practiced for job interviews. I guess no one thought about any of us going to college". Another student who postponed seeking services until late in his sophomore year and had a reading disability reported, "No one ever used the term 'learning disability' to me, ever, in high school, so I certainly never discussed how my learning disability would affect me in college." Again, indicating the lack of college preparation, a student who first sought services after being placed on academic probation at the end of his freshman year stated, "I didn't hide that I had a reading disability in my application to college. I thought that would be it. No one told me that I would have to send information from my school and do it all myself."

Question 5 asked students to identify the individuals who prepared them for the transition to college. The combined results of this question and information from the preceding questions are reported in Table 3. While there is a modest decline in the percentage of those reporting learning about college from transition programs, counselors and school psychologists, and teachers in the later groups, these changes did not reach statistical significance. The most commonly mentioned source of information is fellow high school students. A quote from a student with a mathematics disability in the later freshman group is representative of the majority of students:

We had some workshops in school about choosing the right school. I don't remember anything about them, except that we had them. My parents basically told me what they would pay for and what they wouldn't. They didn't want me to go to the community college, and private colleges and out-of-state universities were out of the question. So I looked at five in-state universities. I couldn't make up my mind, so I talked it over with my buddies. Three of them were going to [university]. So that's where I decided to go. We talked a lot about what it would be like and whether we wanted to room together and what we were majoring in. I remember that we'd hear things and tell each other. I remember one friend told me not to take English my first semester. "It's a killer," he said. We worried more about having the right clothes than anything about courses and class sizes and finding our way to the Office of Disabilities.

While ODS verified that all participants received some sort of special education services during high school, few students initially reported that they did (29%). When followed up with a question about testing accommodations, students only reported information about receiving testing accommodations and no specifics about their qualifications for testing accommodations or types of test situations. All students in the early group indicated that they received testing accommodations, while 78% of those in the later freshman group and 61% in the late group indicated they were receiving testing accommodations in high school.

The final question was asked to determine students' understanding of the legal differences between IEP services under IDEA and services available under Section

Table 3

Percentage of Students by Group Utilizing Various Sources of Information About College

Resource	Groups		
	Early	Later	Late
Transition Program	100	63	70
Counselor/School Psychologist	50	36	17
Teacher	25	27	30
Parents	67	45	61
Current College Students	25	18	26
High School Peers	100	72	87

504 and ADA. Students were asked to describe how they were affected by the differences in laws governing students with disabilities as they transition from IEP services to college. With the exception of one student in the late group who was a special education major, no student was able to explain the differences in the legal regulations governing services. Students in all groups were generally aware of some changes, such as the fact that there were no IEPs in college and that the range of services was larger.

Discussion

This study examined the reasons for and the impact of postponing seeking disability services at a competitive state university by students with a learning disability. We found evidence that receiving disability services made a significant difference in GPA and hours earned by the middle of the sophomore year. That no difference in GPA or credits earned was found immediately after the first semester between those receiving services and those not receiving services could be interpreted as there being few academic differences among the groups. More than likely, however, the lack of difference is due both to a floor effect (39 of the 42 students were in the lowest GPA quartile) and to a period of discovering what the ODS could provide, as

evidenced by the following statement by a woman with both reading and writing disabilities who registered with ODS before starting her freshman year:

My parents and I visited ODS during my college visit. I went to ODS during my first week of classes and got my letter telling my professors I might need extra time on tests. It was later in the semester when I first started reading the emails ODS sent. I didn't really start going there until my second semester. The reading and writing requirements in my history and lit classes were the real reasons I started going.

We found that, in students' narratives of why they sought services when they did, the primary reason for first seeking services in both the later freshman and late groups was academic failure or levels of academic performance that prevented other activities. If we want students to seek services early in college, before an academic crisis occurs, then transitioning students need to be provided with information about the range of benefits provided by ODS and parents need to be enlisted by transition personnel to get them to ODS. Parents played key roles in getting students in the early group involved with ODS.

Students reported that the primary reason for delaying seeking services was time constraints. With so many students reporting a lack of time to seek services once classes begin, high school personnel may want to consider urging contact with ODS prior to the beginning of classes. Also, the ODS may need to find ways of competing with the deluge of information and orientation programming received by freshmen. A male student in the later freshman group who earned a 0.80 GPA his first semester commented:

When you arrive on campus, everyone is after you. You get about fifty emails a day from every group on campus. You have meeting after meeting, activity after activity. I guess it's supposed to keep you from getting homesick or something. I didn't want to be a Young Republican or do an internship in Costa Rica. I wasn't interested in information about teacher education. Someone needed to tell me – Get to ODS now! But it was hard to pick out that call.

Insufficient knowledge about the costs and logistical difficulties of being assessed, however, appeared to differentiate those who proactively sought services from those who sought services later. Students' lack of knowledge was far ranging, including an accurate awareness about available services, the nature and impact of their own disability, and procedures for utilizing campus supports. A male student with a reading disability who delayed seeking services until his sophomore year commented:

It was hard for me to get my head around the fact that in order to get services, it was up to me, and that there were some hoops I had to jump through first. In high school, when I needed help, it kind of magically appeared. Now I know there were a lot of people involved behind the scenes making that happen. And I didn't know if the problems I was having were because I wasn't studying enough or just right or because of my disability. I didn't know where to go to find out.

Students who sought services in a timely fashion were more likely to have participated in IEP meetings in high school, could recall more general school-based transition programming to college, received more orientation to disability services, and received

individually-based preparation specific to their disability than those who postponed going to ODS. The first group's preparatory experiences increased their understanding of their disability and the impact it may have on their postsecondary education. Exposure to information about disability services provided students with a better sense of how ODS could support them academically. If these recollections are accurate, then students without exposure to postsecondary services may lack knowledge of disabilities and services. This informational gap may account for differences between the late and later freshman groups. All students in this study showed some lack of knowledge about how learning disabilities are diagnosed and how services for students with disabilities change between high school and college.

The existing literature on why students do not seek services from disability services has tended to focus on feelings of shame and the fear that, by seeking accommodations, students will be viewed as lazy or getting an unfair advantage by faculty and fellow students. These reasons emerged as only minor themes from these interviews. Only six students specifically mentioned embarrassment or shame. For example, a female student in the late group said:

I guess I was kind of embarrassed that I still needed to get special things that everybody else didn't get. I hoped that things had changed-- my brain or whatever-- and that I could just slip in and be like everyone else. Anyway, it's kind of a hassle. I don't usually use my accommodation letter, unless the course has essay tests.

The decreased emphasis on shame and stigma in these students' narratives may be a result of changes in their experiences with support services in public schools. Today's students with disabilities report much more satisfactory secondary experiences than those of two decades ago (Newman, et al., 2010) and, therefore, may have diminished expectations for negative evaluations of his or her status. Greater importance in addressing deterrents to students seeking services is indicated for providing students with knowledge about procedures, range of disability services, and understanding one's own disability.

Implications for Practice

Students who registered with the ODS early recalled more transition programming in their high schools, focusing on postsecondary education, compared to those who waited to register later. Later registrants often stated that college was not addressed in high school, although they were able to recall details in their employment-focused transition programming. That some students report no college transition programming and many reported very little underscores the call for more deliberate transition programming aimed at college and an end to the practice of assuming that students with disabilities need only transition to work programs. Not only are more students with LD going to 2- and 4-year institutions, much of the training in the skilled trades is now being offered at community colleges, with many of these training programs requiring regular postsecondary academic coursework in addition to job-specific training (Reesem, 2001; Torracco, 2008).

This research has specific implications for transition programs that include the parents of students with disabilities. Parents were noted to be a primary source of influence in seeking services in the students who sought support services early in college. High school staff should prioritize sharing information with parents about the process of seeking services through ODS and the range of services available at postsecondary educational settings. Parents need to be informed about the importance of students registering with ODS when they enroll in college so they can encourage and promote a successful college experience. Parents can play a significant role in approaching services from ODS in a proactive, rather than passive manner, if they are equipped with information from high school support staff.

Another avenue for enhancing transition services is the inclusion of students in IEP meetings. Since all of the students in the early group for seeking services reported attending an IEP meeting and less than half of the students in the late group reported attending one, participation in IEP meetings may have an influence in helping students gain knowledge about their disability and their role in seeking help. High school staff responsible for IEP meetings should consider the value of involving students in IEP meetings as not only an opportunity for increasing the student's role in their education, but also as preparatory in building the student's self-advocacy for future educational needs.

Many of the students' narratives included state-

ments of surprise at the range of services provided by universities as well as statements of dismay about not having been made aware of them. Huge lecture courses, strategic sequencing of courses, preferential enrollment, or alternative housing are not considered by most high school personnel, and many of the transition team members we have worked with seem genuinely unaware of the options afforded students. Postsecondary staff needs to make their high school counterparts aware of these options so that they can make their students aware of them. Many of the students' narratives included statements that began, "If I had known that I could have received..." then they would have contacted the ODS earlier and avoided problems of inappropriate schedules, classes, and living conditions. High school counselors and school psychologists can also assume some responsibility in contacting local postsecondary institutions to learn more about the range of services available there. Increasing communications between high school transition staff and ODS offices on nearby campuses can facilitate the flow of information students need for decision making.

While colleges may fault high schools for underpreparation, there is a limit to which high schools can prepare students for the demands of specific institutions. Transition courses at the college that are specific to the needs of students with learning disabilities have been tried with success (Chiba & Low, 2008). Class size, degree requirements, add/drop policies, residential requirements, advising systems, honor code limitations on academic assistance, social rules, and access to faculty vary widely from campus to campus (e.g., two students complained they had not been told where the ODS was located as a reason for not seeking services earlier). Postsecondary institutions are in a unique position to provide information specific to their institution for students to access services. Students would have to disclose their disability status to their universities, however, for this approach to be implemented.

With so many students reporting a lack of time to seek services, an indirect impact from increasing their understanding of LD and available services may be to help students prioritize a visit to ODS. Students, like all individuals, have time for what they value and consider important. Supporting the need to take time to go visit the ODS office can also be emphasized by parents, high school counselors, and school psychologists to students as a critical step in the college enrollment process. College students with disabilities may be reluctant to

seek services for various reasons. Understanding that registering with ODS may provide them with priority course registration, however, may prompt them to make contact. Regardless of the concerns for time, shame, or identity as a student, increasing the student's knowledge of range of services may facilitate the student seeking services in a timely manner.

Limitations and Future Research

Because this study was conducted at a single institution, it should be regarded as a case study rather than as representative of students with a learning disability in higher education. To gain admission to the university, the students in this study all earned consistently excellent grades in high school and scored well above the mean on SATs. The university has an undergraduate teaching emphasis and a wide variety of academic support services that are used by a large number of students, perhaps diminishing the stigma of other forms of academic support.

The study is further limited by a relatively small sample size, which did not include students with learning disabilities who never utilized disability services. Future research may want to study this difficult-to-find group, which can only realistically be done by identifying students in high school and following them into postsecondary education. This prospective longitudinal approach would also allow comparisons of known approaches to high school transition programming rather than relying on students' recollections. Further, information gained through constructed narratives may increase understanding of the phenomenon but may not be helpful in making programmatic changes. For example, the most common reason students reported for delaying their efforts to seek services was lack of time in their schedules. Although it is important to understand that students may perceive themselves as having no time to go to ODS, this finding should not be directly linked to reducing the amount of programming for freshman students.

Another limitation to this study is the lack of longitudinal data on the perceived benefit of participating in disability services. While we encourage students to register with ODS as soon as they enter college, it would be helpful to know whether most students would perceive benefit at that time. Our finding of a general sense that things were going well might interfere with becoming fully involved with ODS programs early in one's college career.

Conclusions

One of the most common issues discussed in the literature on postsecondary transition is "self-advocacy." In listening to the stories provided by these students about their sometimes slowed movement to disclosure of their disability to campus personnel and subsequent eligibility for services, we find little evidence of a lack of self-advocacy skills, but rather a lack of knowledge about what to advocate for and why. The phrase, "I wish I'd known..." occurs 31 times in these interviews. Some students wished they had known more in high school about their learning disability or what its nature was or what its impact on specific classroom behaviors would likely be. Their understanding of their learning problems increased as they experienced the challenges of college. Others wished they had known about specific services offered at their university. As one student in the late group observed:

I wish it had all been made a lot clearer to me before I started. I wish I had known where the land mines were hiding, like the history term paper I never finished or just the impossibility of me learning to remember all those Latin words in botany. By the time I finished my [General Education] courses, I'd finally figured out what I was good at and what I stunk at. That was when I should have started all over and it would have been a breeze. But when I went to ODS, [name] was able to help me understand my strengths as well as my weaknesses, and at least I'd go into a class knowing where the problems were and having a few tricks up my sleeve to deal with them.

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Appendix

Interview Questions

1. When did you first go to ODS? (Which semester of which year?)
2. What prompted you to go to ODS? (Clarify whether it was for an individual test, individual course, or overall GPA if the reason was academic, grade or time)
 - (a) Did anyone suggest that you go to ODS? Who? (Parent, teacher, advisor, counselor, friend, other?)
 - (b) If students did not go to ODS early in their first semester, ask: Why did you not go to ODS before that? (i.e., lack of knowledge, identity, cheating, and shame)
3. Can you tell me what an IEP is?
 - (a) Did you ever attend a meeting while you were in high school about your IEP?
4. While you were in high school, did you attend school programs about going to college?
 - (a) While you were in high school did you meet with individuals at your school about going to college? Who?
 - (b) In the School programs preparing you for college, did anyone tell you about the Office of Disability Services? Who?
 - (c) In preparing for college, did anyone in the school meet with you individually and discuss your learning disability with you? That is, did someone talk to you about your academic strengths and weaknesses?
5. In addition to school personnel who helped you prepare for college? (Clarify the relationships; if peers, find out whether these were friends in college or classmates.)
6. What special education services did you receive in high school? (If the answer is none, ask about special testing accommodations.)
7. The laws governing students with disabilities change from high school to college. Can you tell me some ways the differences in those laws affect you?

Personal Assistant Support for Students with Severe Physical Disabilities in Postsecondary Education

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Abstract

The purpose of this exploratory research is to document the level of personal assistance support provided to students with severe physical disabilities by disability support services in higher education institutions across the United States. A national survey was conducted of members of the Association of Higher Education And Disability (AHEAD) via an online survey. Of the 326 respondents with usable responses, 36 (14.1%) stated they provided some level of personal assistance services to students with severe physical disabilities, ranging from providing emergency services (25 or 69.4%) to providing residential services with in-house personal assistants (4 or 11.1%). Personal assistance support to students with severe physical disabilities were more likely to be provided at master's, comprehensive, and research universities and less likely to be provided at bachelor's, associate's, and trade/technical schools. Those who provided personal assistant support were more likely to be able to identify students with severe physical disabilities who were negatively impacted by the lack of personal assistance support, were more satisfied with their personal assistance support services, had longer tenure in disability support services, and had greater numbers of part-time staff. Implications for service providers and future research are discussed.

Keywords: Personal assistance services, severe physical disabilities, higher education

The ramifications of having a physical disability in America are clear. Individuals with physical disabilities are disadvantaged in terms of higher education, employment, and income (Stumbo, Martin, & Hedrick, 2009; United States [U.S.] Census Bureau, 2006, 2010). This is especially true for individuals with severe physical disabilities. For example, Steinmetz (2006) reported that 10.4% of individuals age 25 to 64 without disabilities did not complete high school, compared to 14.6% for individuals with a non-severe

disability, and 26.6% for individuals with a severe disability. Similar trends continued in postsecondary education. Slightly over 43% of individuals without disabilities completed a college degree, compared with 32.5% of individuals with non-severe disabilities, and 21.9% for individuals with severe disabilities. These educational disadvantages may transfer into employment and economic disadvantages that are lifelong and more limiting than the actual disability itself.

These issues will become more significant as the number of individuals with severe physical disabilities continue to grow in the U.S. In 2002, 51.2 million people (18.1%) of the U.S. population of 282.8 million had a disability, with 5.1 million needing assistance with three or more activities of daily living (ADLs) and/or instrumental activities of daily living (IADLs) (Steinmetz, 2006). In 2005 there was an estimated 291.1 million people in the U.S., of which 54.4 million (18.7%) claimed a disability (Brault, 2008). Eleven million of those individuals – or 12% - had need for personal assistance ([PAS]; Brault; U.S. Census Bureau, 2010). From 2002 to 2005, the overall number and percent of individuals with disabilities rose (from 18.1% to 18.7%) and the number of individuals needing PAS more than doubled - from 5.1 to 11 million. With the advent of better medical care and pervasive assistive technologies (AT), the number of persons with severe physical disabilities is increasing and may continue to do so in the foreseeable future.

The extent to which these trends may be seen in postsecondary settings is not known, simply because there is extremely limited published data about PAS available to persons with severe physical disabilities provided by disability support offices (DSS) in higher education (Stumbo et al., 2009). After an extensive search of over 30 library databases, no research could be located concerning the numbers of persons with severe physical disabilities in U.S. postsecondary education or their PAS needs. It has been noted that DSS vary widely (Belch, 2004; Stodden & Conway, 2003) and the same may be anticipated for the provision of PAS (Stumbo et al., 2009). The present study provides initial exploratory, although not definitive, data and may prompt future discussion and research to fill the previously mentioned void of information about persons with severe physical disabilities and their PAS needs in postsecondary education.

Use of Personal Assistance and Severe Physical Disability

Verbrugge, Rennert, and Madans (1997) noted that individuals “rarely allow disablement to take its course without efforts to retard or stop the process... Personal and equipment assistance reduce task demand... They operate at the immediate periphery of the individual... Both kinds of assistance aim to solve problems” (p. 384). In other words, individuals with severe physical disabilities work diligently to offset their functional

limitations, and because of their extensive needs, solve these difficulties through heavy reliance on PAS and AT. Those with the most severe physical disabilities may use a variety of AT but rely substantially on personalized, human assistance to perform ADL (e.g., eating, dressing, bathing, transferring, using the toilet, and moving across a small room) and IADL (e.g., taking medication, preparing food, shopping) (Guralnik, 2006; Hoenig, Taylor, & Sloan, 2003; LaPlante, Kaye, Kang, & Harrington, 2004).

Guralnik (2006) specifically defined severe physical disability as when “the individual needs help with three or more of the six ADLs” (p. 162). This definition of severe physical disability, with the emphasis on the need for PAS, is generally supported throughout the disability and health care literature (Desai, Lentzer, & Weeks, 2001; Jans & Stoddard, 1999; Philip, Armstrong, Coyle, Chadwick, & Machado, 1998; Rathouz et al., 1998; U.S. Department of Education [USDOE], 2005).

A number of authors have noted that AT can often augment but not replace human help for these individuals (Agree, Freedman, Cornman, Wolf, & Marcotte, 2005; Hoenig et al., 2003; Kaye, Chapman, Newcomer, & Harrington, 2006; Kennedy, LaPlante, & Kaye, 1997; LaPlante et al., 2004). What is often *not* noted in the literature is that for persons with severe physical disabilities, access to PAS is necessary 24 hours a day, 7 days a week, 365 days a year. While the person will not require assistance every minute of every day, proximal standby help must be continuously available. Consider personal care, for example. In addition to the normal daytime activities, during sleeping hours assistance for essential needs such as turning while in bed or arranging pillows and bedding are required. In the event of illness or emergency, reliable assistance must be available. If the required PAS is not available when needed, the individual will not be able to live successfully in that environment. For tasks common to academic activities, such as turning book pages, getting books from library shelves, opening doors, reaching for items, and turning on/off lights, assistance must be available when it is needed, or again, the individual will not be able to sustain pursuit of a postsecondary degree. To succeed in higher education, individuals with severe physical disabilities need PAS to perform ADL/IADL functions, academically-related tasks, and health-related tasks such as hydration and sun care.

Personal Assistance Services in Postsecondary Education

A number of factors surrounding PAS in postsecondary education have led to its almost total exclusion in the American research literature. First, a relatively small number of individuals are affected compared to those with higher incidence disabilities in higher education. In addition, this group has comparatively higher resource-intensive needs per person than other groups of people with disabilities. From the perspective of the institution, reconstructing the environment to meet the very resource-intensive needs of a small minority of students is difficult to justify given the increasing numbers of students with disabilities entering higher education and whose needs can be met more simply through computer technology or physical and environmental accessibility (Stodden, Roberts, Picklesimer, Jackson, & Chang, 2006; Strobel & McDonough, 2003). Finally, there is no legal mandate to provide PAS in higher education as there is for secondary education (USDOE, 2005, 2007). However, postsecondary degrees are increasingly essential for all individuals to obtain and retain competitive employment (Diab & Johnston, 2004; Dowrick, Anderson, Heyer, & Acosta, 2005; Stodden & Conway, 2003; Stodden & Dowrick, 1999/2000; Stodden et al., 2006). This may be especially true for persons with severe physical disabilities (Brault, 2008; Steinmetz, 2006).

Related Research on PAS in Higher Education

The only published study that focused solely on the provision of PAS in higher and further education was authored by Parker (1999), who conducted a qualitative investigation at the University of East London in the U.K. Six students with significant disabilities and seven personal assistants were interviewed. The investigator noted similar issues to the U.S: (a) difficulties with organizational structure, (b) lack of consistent funding and fair wages, (c) newness of roles for the individual as a first-time student and new employer, (d) difficulties in maintaining employer/employee relationships, (e) quality/quantity of the PAS providers, (f) training for the student (e.g., assertiveness, communication, etc.) and the personal assistant, and (g) lack of clear mandates to provide PAS.

Two studies used overlapping data sets obtained by the National Center for the Study of Postsecondary Education Supports (NCSSPES): Stodden, Whelley, Change, and Harding (2001) and Tagayuna, Stodden,

Chang, Zelenik, & Whelley (2005). In the 2001 report, AHEAD and non-AHEAD members were surveyed about, among other issues, the supports or accommodations provided to students with disabilities on their respective campuses. DSS staff were asked to indicate how often during a calendar year they offered each of the 34 supports listed on the survey. While the range of services surveyed is broad – from job placement to document conversion to adaptive furniture, the only form of PAS as a support for persons with severe physical disabilities was notetakers.

Singh (2003) studied postsecondary students with orthopedic disabilities in terms of service provision in four categories: (a) structural accessibility, (b) academic accessibility, (c) dorm-living, and (d) recreational opportunities. Interestingly, Singh defined accessibility of dorm living as:

...availability of wheelchair accessible dorm rooms throughout residence halls, accessible laundry facilities, accessible bathrooms, accessible dining rooms, accessible fire exits, availability of 24 hour nurse on call in the residence halls, on-campus repair of mobility equipment such as wheelchairs and crutches, and help in the recruitment and training of personal care assistants (p. 368).

Respondents were asked to rate each of these areas on a 1 to 5 scale, with a rating of 4 or 5 indicating accessibility. The investigator reported that only 2% of the institutions provided accessible dorm facilities/services as defined above. Unfortunately, no further break down of item scores is provided, leaving unclear how many institutions provided “24 hour nursing care” or recruitment and training of personal care assistants. However, recognition is given for the PAS needs of students with orthopedic disabilities.

Fuller (2003) surveyed 81 large, public institutions about 20 supports that ranged from alternate test formats to course substitutions to transportation. Of the 43 respondents, two reported providing personal assistants. The only item with fewer responses (one) was “waiver of admissions proficiency requirements” (p. 67). While the number of institutions providing any accommodation of personal assistants is miniscule, of importance to the present examination is that personal assistants were mentioned at all.

The second study using the NCSSPES data, by Tagayuna et al. (2005), replicated the prior study to

compare the change over a two-year time period. Again, although this study divided the 34 supports into six categories (common generic supports, educational and personal strategies instruction, career assessment and work experiences, assistive technology supports, administrative support, and financial assistance), no mention was made of PAS for students with severe physical disabilities beyond note takers. Christ and Stodden (2005) conducted a factor analytic study of the same data and determined that the majority of the 34 services fit under four categories of: (a) strategies, (b) assistive technology, (c) accommodations, and (d) vocation work support.

Pingry (2007) studied the records of 1,289 students with a variety of disabilities from three postsecondary institutions in Missouri. Her list of 15 disability supports included classroom assistants, for example note takers or laboratory assistants, but did not include personal assistants for personal ADLs or IADLs. She concluded that nearly 20% of students with physical disabilities (defined as including deafness and hearing loss; low vision and blindness; and mobility, systemic, or disease-related disabilities) used classroom assistants.

Collins, Hedrick, and Stumbo (2007) reported on program evaluation data of the residential transition service provided by the University of Illinois to students with severe physical disabilities necessitating PAS. Between 1981 and 2003, 151 individuals with severe physical disabilities utilized these services while attending the university. Of these individuals, 109 (87%) had earned degrees. Data on the 65 graduates from 1994 to 2010 (when better records were kept), show that 26 (40.0%) have earned professional employment within one year of graduation and 28 (43.1%) had enrolled in graduate or professional school within one year of graduation. Thus, less than 16.9% ($n=11$) were unemployed and not enrolled in graduate or professional school within one year of graduation (P. B. Malik, personal communication, September 29, 2011). Such outcomes offer compelling, albeit preliminary, support for the value of providing PAS services.

Although Stodden et al. (2001, p. 190) advocated that “the nature of an individual’s disability and the level of severity of that disability will likely influence not only specific educational supports that are needed, but also the entire support strategy,” it is also clear that if individuals with high support needs cannot live within the educational environment, they will not be able to *succeed* in the educational environment. Even under

ordinary circumstances, the transition from secondary to postsecondary settings, and being away from home for the first time, is overwhelming for many first-year students. For incoming students with severe physical disabilities who must face the more typical academic and social demands of a first-year experience while also negotiating the inherent difficulties of finding, hiring, and managing human assistants for help with school work and for the most private and personal of bodily tasks, the road is difficult at best. And for many college staff, the provision of personal assistants for students with severe physical disabilities is not even “on the table.” As noted by Parker (1999, p. 500): “Full equity of access to higher education for students with disabilities is unlikely to be achieved until the law establishes this [PAS] as a right.”

Purpose of the Study

According to Behrens (1997) and Yeager, Parkhurst, and Henshel (2007), there are two types of approaches to targeting and analyzing data. The first is confirmatory data analysis that is used when the research topic is mature enough to allow “statistical investigation of the hypotheses that motivated the study” (Yeager et al., p. 673). The second type is exploratory data collection and analysis, a coalition of procedures used to “learn from the data at all stages of research” (Behrens, 1997, p. 132). In exploratory data analysis the researchers are interested in the broad question, *What is going on here?*, often focusing on graphic representations of data and tentative model building, emerging and unexpected outcomes, and data as starting points rather than conclusions (Behrens, 1997). Tukey, in 1977, was among the first to strongly advocate exploratory data analysis alongside confirmatory data analysis (Behrens, 1997). According to Behrens, Tukey (1980) is quoted as saying: “(a) *both* exploration and confirmation are important, (b) exploration usually come *first*, and (c) a given study can, and usually should, combine *both*” (p. 133).

The current study focused on the degree to which PAS were provided by disability service personnel to students with severe physical disabilities in higher education institutions and differences between those who do provide such services and those who do not. Researchers collected descriptive information such as the numbers of institutions that provided PAS, their enrollments of students with disabilities, what types of

PAS they provided, and the characteristics of the disability service providers themselves. In addition, because there is such a lack of literature on the topic of PAS for students with severe physical disabilities in postsecondary education, the research team adopted an exploratory strategy to search for graphical representations and potential models that may further illuminate the topic at hand.

Method

Sampling Technique

This study used all 2,229 professional members of AHEAD as of May 2008 as a purposeful sample (Babbie, 2010). In addition to the AHEAD membership, due to the funding source, all DSS coordinators in Illinois, Iowa, and Wisconsin (approximately 150 individuals) were sent email requests for participation. This sample was selected as they are individuals who provide support services to students with disabilities enrolled in higher education institutions across the U.S. and Canada. Each institution was limited to one response via the survey software.

Instrument

No instrument was located that queried the status of PAS in higher education institutions. Therefore, the research team developed the project-specific, web-based survey used for this preliminary study. The survey consisted of three areas of interest: (a) staff description, (b) university description/student enrollments, and (c) PAS offered. These categories were determined to be important to the description of the current state-of-the-art in PAS in higher education. An expert panel was used to review the survey, as this method is less expensive and may be more productive than other types of survey pretesting such as pilot tests (Presser & Blair, 1994; Yan, Kreuter, & Tourangeau, 2010). In a study examining whether expert reviews are sufficient to determine survey item inadequacy, Olson (2010) noted that "average expert ratings successfully identify questions that are more likely to have high levels of item non-response or inaccurate reporting," (p. 312), although this may vary across surveys and experts. Olson concluded, "Not only do expert reviews identify question problems, but that these problems are related to meaningful data quality issues. Survey practitioners are advised...to use multiple experts to review questionnaires" (p. 313). The expert panel of seven individuals (three DSS staff, three

professionals with extensive experience with disability, one individual with a severe disability who attended postsecondary institutions) reviewed the survey and suggested revisions to ten items prior to its use. The final version of the survey contained 36 items.

The web survey consisted of 35 questions: (a) seven items concerning the number, characteristics, and qualifications of the respondents; (b) nine concerning the institution or enrollments; and (c) 18 on the types of PAS offered. Item formats included fill in the blank (i.e., "How many of the other staff work full-time?"), forced choice (i.e., "Is personal assistance support provided to your school's students with severe physical disabilities?" Yes or No), and Likert scales ("About how satisfied are you with the range of personal assistance services that is currently available to the students with severe physical disabilities at your school?" 1 = Very Dissatisfied to 5 = Very Satisfied). Prior to items about students with severe physical disabilities, the following definition was provided: "If an individual needs help with three or more of the six activities of daily living--eating, dressing, bathing, transferring, using the toilet, and walking across a small room--the individual has a severe physical disability." The final question on the survey was open-ended and asked for further comments or questions regarding PAS in postsecondary education.

The survey was designed so that respondents were only asked questions pertinent to their prior answers. For example, if respondents replied they did not provide PAS, the remaining questions on types of PAS were automatically skipped. The study was exempted from full review by the two universities' IRB review boards prior to its initiation, due to the unlikelihood of harm to its subjects.

Data Collection Procedure

The AHEAD office staff sent to all 2,229 professional AHEAD members a cover letter (email) from the researchers as well as a link to the survey. All DSS coordinators in Illinois, Iowa, and Wisconsin were sent similar email cover letters from the investigators with a direct link to the web survey. The cover letter/email explained the purpose of the study as well as conditions of anonymity and established a deadline for response. The link directed participants to the web survey, where they first clicked through an informed consent prior to viewing and answering the items. A thank you followed their reply to the last statement.

After two weeks, a follow-up email was sent by the AHEAD administrative staff to AHEAD members and by research staff to the additional Illinois, Iowa, and Wisconsin DSS coordinators to remind persons who had not filled out the survey to do so in order to increase the response rate. The survey was open to respondents for 39 days, from May 5 to June 12, 2008. Out of 367 (15.4% of 2,379) returned responses, 326 were usable. Unusable surveys included those filled out by staff other than the coordinator. The final return rate was 13.7%. A number of reasons may have produced the relatively low return rate, including timing of the survey (May and June) and the lack of salience of the topic to the audience (Fan & Yan, 2010). Overall, web surveys are expected to produce lower return rates (about 11% lower than mailed surveys) but are often preferred due to low cost, geographic penetration, and easy transfer to analytic software (Fan & Yan, 2009; Kaplowitz, Hadlock, & Levine, 2004; Manfreda, Bosnjak, Berzelak, Haas, & Vehovar, 2008).

The survey allowed for users to stop at any time or skip items; consequently, several questions have a different number of responses compared to respondents. The total number of respondents per item is noted when that number deviates from the total sample of 326. In addition, the survey parameters only allowed one person per school to respond to the survey.

Data Analysis Procedures

WebSurvey@UW software automatically creates a database of respondents' answers that can be exported to data analysis software programs. Soon after the survey URL was closed, quantitative data were exported to SPSS 18.0. Data analysis, including descriptive statistics, correlations, and mean comparisons, were employed depending on the variables and research question. Content analysis was used to code open-ended, qualitative data. Additionally, a statistician was hired specifically to aid with exploratory data analysis, including model building and graphical display of results.

Results

The intent of this study was to explore the status of PAS for students with severe physical disabilities in higher education and provide foundational data concerning the institutions, the PAS provided, and the DSS coordinators themselves. Furthermore, graphic

representations, preliminary models, and insights were sought via exploratory data analysis. Results are presented in two parts. The first provides demographic characteristics of the sample respondents, their institutions, and the students for whom they provide services. The second section provides results of additional exploratory analyses.

Characteristics of the Sample

Service providers. Each respondent was asked if he or she was the person responsible for coordinating DSS at his or her university. A total of 326 (88.8%) responded in the affirmative. The 41 (11.2%) who either said no or did not answer were not permitted to continue with the survey. The number of additional full-time staff ($n = 218$) ranged from 0 to 35, with an average of 3.7 staff members ($SD = 4.4$). The number of additional part-time staff ($n = 193$) ranged from 0 to 100, with 4.8 being the average ($SD = 12.1$).

The vast majority of coordinators (234 of 242 or 96.7%) were members of AHEAD at the time of the survey. Their work experience in DSS ranged from one year to 34 years, with a mean of 10.0 years ($SD = 7.4$). Almost two-thirds (155 of 240 or 64.6%) had worked in DSS for 10 years or less. The majority (182 of 242 or 75.2%) held masters degrees, while 24 (9.9%) had doctoral degrees, and five (2.1%) held medical degrees. In summary, most coordinators employed almost four additional full- and almost five part-time staff in the DSS, were members of AHEAD, had worked 10 or less years in the field, and held masters degrees.

Institution, enrollment, and student experience characteristics. Respondents were asked nine questions about their institution's characteristics. The majority of institutions (237 of 243 or 97.5%) were located in the U.S. The states with the highest responses were Illinois (23 or 9.8%), California (18 or 7.7%), Texas (17 or 7.2%), and New York (11 or 4.9%). Most were public or government-sponsored (154 of 241 or 63.9%) instead of private (87 or 36.1%). Most respondents ($n = 241$) worked at two-year colleges offering associates degrees (63 or 26.1%), comprehensive universities (47 or 19.5%), colleges offering master's degrees (43 or 17.8%), and research universities (40 or 16.6%).

Table 1 provides the overall enrollment patterns at the respondents' institutions. Overall, the average enrollment of respondent's institutions was 11,442, with an average of 416 students with disabilities enrolled per institution and 362 registered with DSS. Respondents

Table 1

Average Student Enrollments at the Respondents' Postsecondary Institution

	Range	Mean	Standard Deviation
Total number of students enrolled at institution (n=235)	1,000 - 70,000	11,442.2	11,832.4
Students with disabilities enrolled at institution (n=125)	100 - 4,000	416.1	604.5
Students with disabilities registered with DSS at institution (n=248)	100 - 2,000	361.6	352.9
SWSPD* enrolled at institution (n=201)	1 - 50	5.2	15.4
SWSPD registered with DSS at institution (n=130)	1 - 197	7.5	18.5

*Note: *Students with Severe Physical Disabilities*

reported an average of about five students with severe physical disabilities enrolled per institution and eight registered with DSS.

Table 2 provides an overview of student enrollments by type of institution. Overall, research universities reported the highest average numbers of total student enrollments, students with disabilities enrollments, and students with disabilities being registered. Colleges offering master's degrees drew highest averages of students with severe physical disabilities enrolled and registered. Colleges offering primarily bachelor's degrees held the lowest averages for all categories of students with and without disabilities.

Experiences of Students with Severe Physical Disabilities

Respondents were asked six questions about students with severe physical disabilities whose academic experience was negatively affected by the lack of PAS within the last 12 months ("Are you aware of any prospective students with severe physical disabilities who did not enroll in your school because they were concerned about difficulties in securing personal assistance services?"). Of the 255 respondents to this question, 30 (11.8%) replied that they knew of prospec-

tive students who did not enroll at the institution due to concerns about difficulties securing PAS. Respondents were asked to report the number of students in this category. Twenty-six respondents reported a total of 47 students, with an average of one or two students per school. A similar question was asked about students with severe physical disabilities who left the institution due to difficulties with PAS. A total of 15 respondents reporting knowing of such students, with an estimated total of 21 students dropping out. The final item in this grouping asked if any students' success at school was negatively affected by the lack of PAS. Thirty-three respondents recalled this situation, with an average of two students per response institution.

Respondents' Overall Satisfaction with PAS Provision

The final question in this section of the survey asked respondents their degree of satisfaction with their provision of PAS ("About how satisfied are you with the level or amount of PAS provided to students with severe physical disabilities at your institution?"). The intent was to measure the DSS coordinators' appraisal of their service offerings for students with severe physical disabilities. The item was framed so

Table 2

Average Student Enrollments by Type of Postsecondary Institution

	Two-year College Offering Associates Degree (n=63)	Comprehensive University (n=47)	College Offering Master's Degree (n=43)	Research University (n=38)	College Offering Bachelors Degrees (n=25)
Total Number of Students Enrolled	M=10,582.2 SD=12,972.5	M=11,871.2 SD=8,433.5	M=5,252.8 SD=4,195.1	M=20,963.7 SD=12,395.5	M=4,210.7 SD=6,258.2
Students with Disabilities Enrolled	M=364.3 SD=424.6	M=455.5 SD=353.9	M=207.8 SD=218.2	M=703.3 SD=993.9	M=121.8 SD=198.8
	M=376.4 SD=356.0	M=365.8 SD=268.4	M=189.9 SD=212.3	M=597.0 SD=449.5	M=146.6 SD=141.9
SWSPD Enrolled	M=4.1 SD=5.4	M=4.8 SD=11.5	M=8.4 SD=32.2	M=7.8 SD=9.5	M=1.0 SD=1.5
	M=5.8 SD=5.3	M=8.0 SD=14.2	M=12.2 SD=39.6	M=8.6 SD=9.6	M=2.0 SD=1.3

Note: SWSPD = Students with Severe Physical Disabilities; DSS = Disability Support Services; M = Mean; SD = Standard Deviation

that both providers and non-providers of PAS could respond - those who provided PAS services may be satisfied/dissatisfied with the services they offered and those who did not may also be satisfied/dissatisfied that they did not provide PAS. The answers were recorded on a five-point Likert scale, with 1 being 'very dissatisfied' and 5 being 'very satisfied.' Two hundred and forty persons responded, with an average rating of 3.2, indicating mostly 'neither dissatisfied nor satisfied.' When those who provided PAS ($n = 32$ respondents) were compared with those who did not ($n = 209$ respondents), the former group had an average satisfaction rating of 3.19 and the latter group of 3.17. There were no statistically significant differences between these groups in terms of satisfaction ratings with PAS provisions at their institutions.

Provision of PAS

Of all 367 respondents, 36 (10.2%) provided PAS, 219 (59.7%) did not provide PAS, and 112 (30.5%) did not respond to the question. Figure 1 illustrates that MA-granting institutions were much more likely to provide PAS, with 2-year schools the least likely. Research universities and comprehensive universities were almost equally likely to provide or not provide PAS services.

Table 3 contains the list of PAS to which the sample responded. The most frequently offered PAS was dealing with emergencies and the least frequently offered service was providing residential housing that included PAs and PA training. As PAS got more complex and resource-intensive, fewer institutions were involved.

Following the examination of descriptive data, exploratory analyses were conducted. The first area explored was the key demographic differences between DSS coordinators who did and did not provide services to students with severe physical disabilities. Although institution type as a predictor was certainly the strongest differentiator (as shown on Figure 1), two other elements differentiated PAS providers from those who did not provide PAS: (a) percent of respondents who cited their satisfaction with their PAS generally, and (b) number of part-time staff. These data are displayed in Table 4. Percentagewise, individuals who provided PAS were more satisfied with their overall level of PAS compared to non-providers, although their average ratings of satisfaction were not statistically different. Additionally, PAS providers had significantly more part-time staff members than non-providers of PAS.

It was initially surprising that tenure within disability services did not emerge as a significant differentiator between PAS providers and those who do not provide PAS. Therefore, further analysis examined the relationship between tenure in disability services and satisfaction with services provided. This relationship is depicted in Figure 2. In particular, individuals with less than six years of experience in disability services are the least satisfied with the PAS they provided.

Given the interesting relationship between tenure and satisfaction with PA services offered, it seemed worthwhile to explore differences in tenure by type of PAS offered. It is important to note that this examination is only on a subset of 36 respondents who indicated providing PAS, and the results are presented as a direction for future consideration rather than as definitive proof. Of interest is the fact that more tenured individuals in disability services are also more likely to provide PAS that include having a person on-call 24-7, provide training to PAs, and offer residential services (see Figure 3).

Finally, these data provide an opportunity to explore how offering different PAS relate to each other. Not all services are created equally; some services require more effort or expense. The investigators wanted to see if persons indicating they provided one service made them more likely to offer a different service. It is again important to note that these results are a first exploratory step and represent only 36 participants from the entire sample. A "heat map" was created as a way to display hierarchical data in a matrix that showcases the patterns of data (Wilkinson & Friendly, 2009). The heat map (Figure 4) displays services offered, from least comprehensive (top) to most comprehensive (bottom). Also, darker shading on the map represents lower percentages of individuals who provide that service. This figure shows that, given the high concentration of black in the upper right corner of the figure, few people who offer less comprehensive services indicated also offering more comprehensive services. As depicted in the lower left of the heat map, individuals who offer comprehensive services are more likely to offer less comprehensive services, too. In other words, institutions that provide 24-hour residential housing with PA services also are likely to offer the less comprehensive services such as PA training, needs assessments, home health contacts, and handling emergency situations. Conversely, those who handle emergency situations are not likely to offer

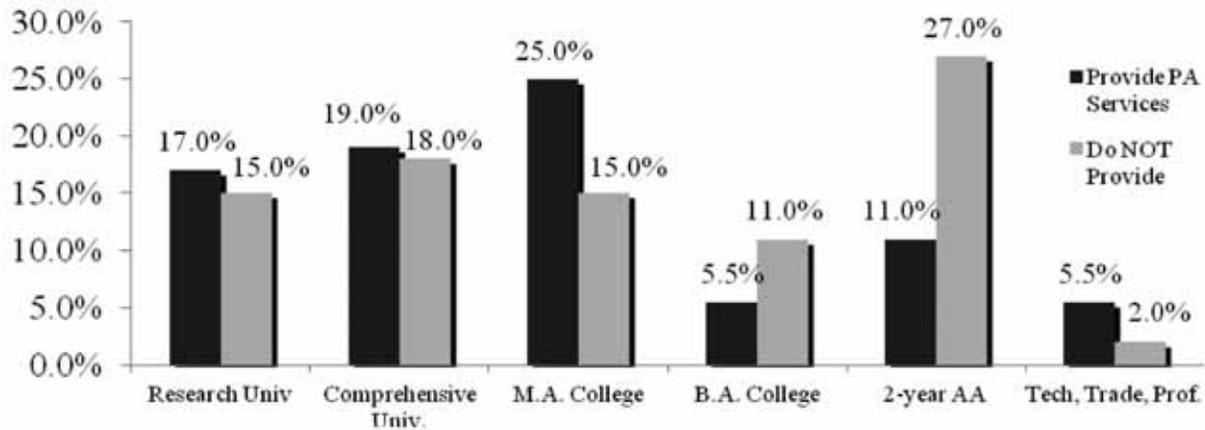


Figure 1. Respondents Who Did and Did Not Provide PAS by Institution

Table 3

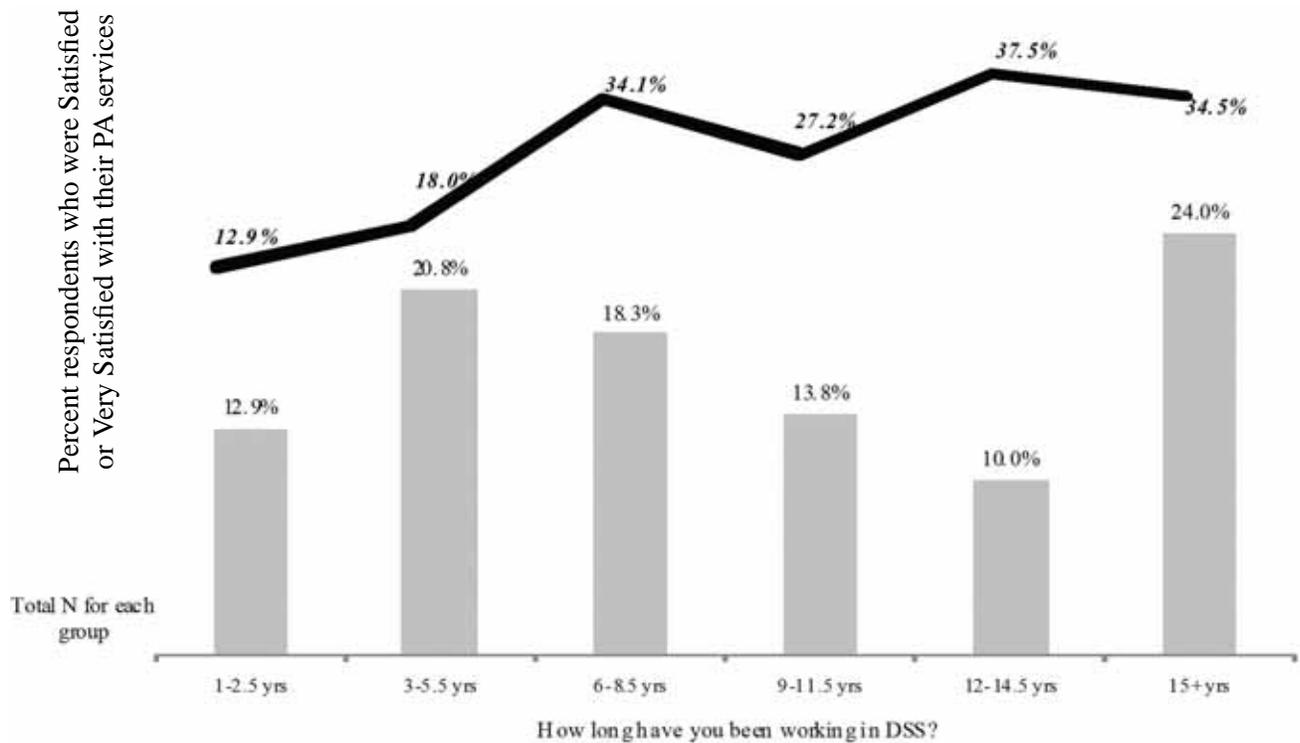
Types of Services Provided by Those Who Provide PA Services

Type of PAS Provided (n=36)	n	%
Deal with emergency situation	25	69.4
Maintain contact with home health care agencies	16	44.4
Help student create announcements to recruit PAs	15	41.7
Help students secure and train qualified PAs (n=35)	11	31.4
Maintain current list of individuals available as PAs	11	30.6
Assess individual student needs related to PAS	9	25.0
Provide PA management training to students	7	19.4
Have on-call person 24/7/365	6	16.7
Provide general training to PAs (e.g., lifting, transferring, etc.)	4	11.1
Provide residential services that include PAs and PA training	4	11.1

Table 4

Satisfaction and Number of Part-time Staff of Those Who Did and Did Not Provide PAS

	% of Respondents “Satisfied / Very Satisfied” with PAS	<i>M</i> and <i>SD</i> of # of Part-time Staff
Provided PAS (n=36)	36.2	<i>M</i> =8.0 <i>SD</i> =19.7
Did Not Provide PAS (n=145)	24.2	<i>M</i> =4.9 <i>SD</i> =12.1



Note: The categorizations used in Figure 2 were used because these seemed to be distinct categories based on trending of other metrics and face validity of these categories. In general, the longer someone has been working with DSS, the more satisfied they are with PAS.

Figure 2. Percent of Respondents Satisfied or Very Satisfied with Their PAS by Length of Service

		Emergency Situations	Announce to Recruit	Home Health Contact	List of PAS	Train PAS	Need Assessment	PA Management	24/7 Success	PA Training	Resident
Emergency Situations	N=25		52%	56%	32%	32%	36%	24%	24%	16%	16%
Announce to Recruit	N=21	62%		43%	48%	38%	19%	19%	14%	10%	10%
Home Health Contact	N=16	88%	56%		50%	19%	50%	25%	25%	19%	19%
List of PAS	N=11	73%	91%	73%		46%	46%	36%	27%	27%	18%
Train PAS	N=11	73%	73%	27%	46%		27%	27%	9%	18%	18%
Needs Assessment	N=9	100%	44%	89%	56%	44%		44%	33%	33%	22%
PA Management	N=7	86%	57%	57%	57%	57%	57%		57%	43%	29%
24/7 Access	N=6	100%	50%	67%	50%	50%	50%	67%		17%	67%
PA Training	N=4	100%	50%	75%	75%	50%	100%	100%	75%		50%
Resident	N=4	100%	50%	75%	50%	50%	50%	50%	50%	50%	

Figure 4. "Heat Map" Showing the Likelihood of Offering Service

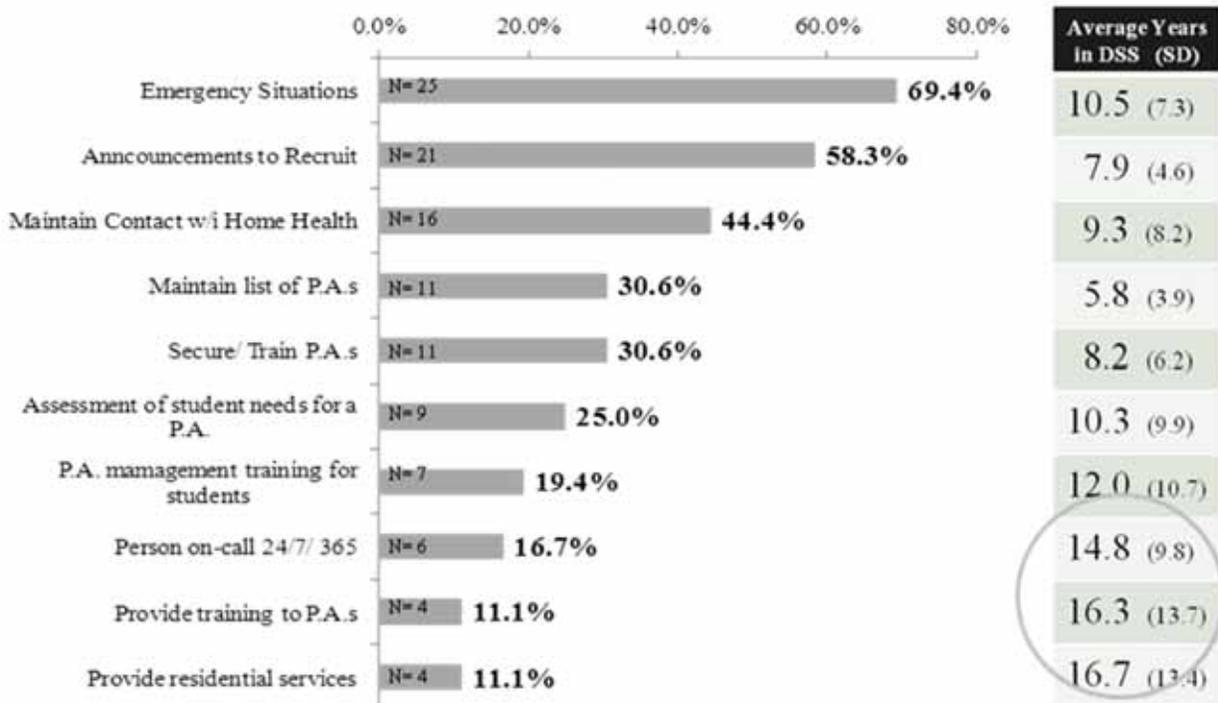


Figure 3. Influence of Tenure in DSS on Type of Services Provided

additional services beyond helping students develop announcements to recruit PAs and maintaining contact with home health agencies. Again, these are small samples but this provides a formative look at how the PAS offerings interrelate.

Discussion

The purpose of this study was to examine the degree to which PAS were provided to students with severe physical disabilities in postsecondary education and to explore potential graphic displays and models that may help explain current service provision. Results must be considered within the context of the study's limitations. The researchers used a web survey, which can result in lower return rates than mailed surveys (Kaplowitz et al., 2004), although this is not always the case (Presser & Blair, 1994). However, the use of a web survey with a specific group such as AHEAD members who are most likely proficient in computer technology may, in fact, produce higher response rates since respondents may view it as more efficient and less time consuming (Wright, 2005). The present study's return rate of less than 14% may suggest that individuals who did not provide PAS were not

interested or invested in the topic. Another limitation of web surveys is that they may be viewed as 'spam' by the respondents, although this would have been a much less concern for this study due to the 'cover email' sent by the AHEAD administrative office. While the use of a web survey allowed the research team to focus very narrowly on a specific group of respondents (Schmidt, 1997), web surveys do not allow respondents to clarify questions by asking the researchers directly, much like mailed surveys. Therefore, respondents may have misinterpreted the questions about types of PAS and been unable to ask clarifying questions. Also, it is difficult to know whether this sample represents all DSS coordinators as other published studies have asked only about AHEAD membership (Dukes, 1997) or only about familial veteran status and gender, but no other demographic information (Vance & Miller, 2009). Research developing a demographic profile of DSS coordinators and members of AHEAD may be helpful in the future. Additionally, the present study surveyed DSS providers and not students with severe physical disabilities themselves. Thus the results may or may not be similar to how students with severe physical disabilities would describe or evaluate PAS services or their impact on the students' ability to participate in postsecondary education.

The results of this study, however, illuminate a number of interesting trends concerning the provision of PAS to students with severe physical disabilities enrolled in higher education. To our knowledge it provides a number of data points not found in past literature. First, a very small number of disability service providers include PAS in their program array. In the present study, 10.2% provided PAS compared to 5% in Fuller (2003), the only other study that reported on PAS as a DSS service. Again, it should be noted that there is no legal mandate in the United States that institutions of higher education provide services of a “personal” nature, such as PAS. Those who do provide PAS often provide less complex, less resource-intensive services such as helping students develop PA recruitment materials and maintaining contact with home health agencies instead of more resource-intensive PAS such as 24-hour/7 days per week residential services. Given the dearth of institutions that offer extensive PAS support, it is unlikely that postsecondary students who need extensive assistance in obtaining and managing their PAS needs are receiving adequate services, and less likely that they are attending their institution of first choice since so few institutions provide a full array of services. No other studies reporting parallel data could be located for data comparison.

Second, it is also interesting to note that PAS are more likely to be provided at master’s level, comprehensive, and research institutions which, as one might surmise, also have higher average numbers of students with severe physical disabilities. PAS are least likely to be provided at associate’s, bachelor’s, and trade/technical institutions, which have the lowest average enrollments of students with severe physical disabilities. This is an unexpected finding. One might assume that the latter three kinds of institutions, in fact, would be more likely to have higher enrollments of students with severe physical disabilities as their reach is more localized and students would be more able to remain in parental or familial homes and use family members as PAs while attending school; however, this was not the case. Further research is needed to investigate this unexpected finding. Again, no similar studies could be located for comparison.

Third, DS providers’ level of satisfaction/dissatisfaction with their provision of PAS provided interesting data. A higher percentage of those who provided PAS were more satisfied with their PAS services, indicating that perhaps coordinators who did not provide services

felt a greater need to do so. This point needs clarification through future research. However, both groups were similar in the ratings of services satisfaction. In addition, those who had served in disability services for fifteen years or more were more likely to be satisfied with the PAS services they provided while individuals serving less than three years were the least satisfied. This may be due to individuals with longer tenure either being more likely to provide more extensive PAS or being more aware of how their PAS compared with services provided at other institutions. Other research data concerning the satisfaction of DSS coordinators with their services could not be located.

Fourth, the heat map data may help those individuals dissatisfied with the PAS offered at their institutions, by serving as a road map of sorts for future program development. As one goes from less to more comprehensive services, the probability ‘clusters’ of services are illuminated. While this finding is extremely tentative, the data suggest that there may be three levels of PAS provision. Category I/Minimal Assistance includes handling emergency situations, helping students develop PA recruitment materials, and maintaining contact with home health agencies. Category II/Intermediate Assistance includes Category I plus keeping a current list of PAs, generically training PAs, and conducting needs assessments of students’ PA needs. Category III/Extensive Assistive includes Categories I and II plus PA management training to students, 24/7 access, specific PA training, and residential housing support with PA services. While these are not inflexible categories with impermeable boundaries, they may help program developers advance to the next level of services.

Implications for Future Research

The results of this study point to the need for additional investigations. First, it would be valuable to obtain students’ perceptions of PAS in postsecondary education. Are students with severe physical disabilities limited in their selection of appropriate institutions by the lack of PAS available or the inadequacy of the services that are available? The present study suggests that access to PAS supports is extremely limited. The enrollment, retention, and graduation rates of students with severe physical disabilities may be severely compromised although these outcomes were not the focus of the present study. In addition, enrolled students who

require PAS should be queried about their satisfaction with the current array of services at their schools, with a focus on availability, adequacy, and relationship to success in school, and potentially, in their careers.

It would also be beneficial to explore more fully the barriers to offering more comprehensive PAS from the institutional perspective. Is the lack of a legal mandate a primary barrier? Although there is an unspoken assumption that resources, both financial and personnel, constitute significant barriers to PAS provision, the validity of this assumption warrants exploration given that the institutions that provide significant PAS support do so on a cost recovery basis.

Third, it would also be interesting to further delve into the histories of DSS coordinators who are employed by institutions that provide PAS. What circumstances prompted the institution to take this very unique action? What were the key motivators? Do the providers have personal experience with PAS that predisposes them to advocate for the enactment of such services? Are institutions that provide PAS more or less likely to provide more extensive support services for other subgroups of students with disabilities? Data provided by this study may bring a sharper, yet preliminary, focus to the availability and variability of PAS in higher education and encourage future discussions surrounding the viability of providing these services.

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Screening for Learning Disabilities in Adult Basic Education Students

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Abstract

The extant literature offers little to describe the processes for screening students in adult basic education (ABE) programs for potential learning disabilities, referring adult students for diagnostic assessment, or barriers to obtaining diagnostic assessment for a learning disability. Without current documentation of a learning disability, ABE students are excluded from obtaining accommodations on the GED, in the workplace, and in postsecondary education, thereby limiting opportunities for meaningful participation in these pursuits. Attentive to those two concerns, this article presents results of a study investigating learning disability screening practices in Ohio ABE programs over a four-year period. Results document that screenings have increased, particularly following the implementation of statewide policies and professional development. While the rate of screenings increased, the overall number of students who were referred and then received a diagnostic assessment has remained low. Program administrators identified assessment costs as a significant barrier to obtaining diagnostic assessment. Additional research is needed to identify and describe specific barriers to diagnostic assessment.

Keywords: postsecondary, accommodations, screening, diagnostic assessment, adult literacy

Learning disabilities (LD) is a broad term describing a wide variety of disorders, including “disorders in one or more of the basic psychological processes involved in understanding or using spoken or written language” (IDEA, 2004 Section 300.8 (c)(10)). The definition of specific learning disability (SLD) used by the Ohio Adult Basic and Literacy Education (ABLE) Program is that published by the SLD Initiative and the National Research Center on Learning Disabilities:

The central concept of SLD involves disorders of learning and cognition that are intrinsic to the individual. SLD are specific in the sense that these disorders each significantly affect a relatively narrow range of academic and performance outcomes. SLD may occur in combination with other disabling conditions, but they are not due primarily to other conditions, such as mental retardation, behavioral disturbance, lack of opportunities to learn, or primary sensory deficits. (National Research Center on Learning Disabilities, 2007, p. 2)

Although the definition varies according to the specific agency or association, most professionals agree that LD are intrinsic to the individual, persist across the lifespan and can, therefore, be diagnosed later in life (Taymans, 2012). These learning exceptionalities often become apparent again as adults return to school to improve basic skills, earn a GED credential, or transition to postsecondary education.

One pathway into (or back into) academics or towards employment for adult learners is the adult basic education (ABE) system; in Ohio, this system is labeled Adult Basic and Literacy Education (ABLE). Many ABLE students have struggled with formal learning, were unsuccessful in school, and may have undiagnosed LD (Corely & Taymans, 2002; Mellard, 1998; National Adult Literacy and Learning Disabilities Center, 1995; Patterson, 2008; Reder, 1995; Ross-Gordon, 1989). ABLE instructors are skilled at adapting their instruction to meet the needs of their adult learners. However, adequate documentation of a diagnosed disability is required for students with LD

to have ensured protection from discrimination due to disability, access to reasonable accommodations on standardized assessments (e.g., the GED) in most educational settings, and in the workplace. As adult learners plan to transition from ABE programs into postsecondary education or employment, diagnostic evaluation and current documentation becomes ever more important.

Learning disabilities are recognized as a disability under a variety of federal laws, including the Individuals with Disabilities Education Act (IDEA), Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA) amendments. Under these laws, individuals with documented LD are entitled to support services and accommodations. Thus, without current documentation of a disability they can be excluded from formal accommodations, such as accessible facilities, modified work schedules, modified or adaptive equipment, readers, or modified examinations or training that can contribute both to access and success in the workplace, as well as in postsecondary education. As educators working closely with ABE students during this transition phase, ABE practitioners are well-positioned to ensure that students have the opportunity to receive a diagnostic evaluation.

Adults with undiagnosed LD are often undereducated, unemployed (or underemployed), and often struggle with low self-esteem and mental health problems (Lancaster & Mellard, 2005). Research indicates the high personal as well as societal costs of not providing diagnostic services and appropriate interventions for individuals with LD (Blackorby & Wagner, 1996; Murray, Goldstein, Nourse, & Edgar, 2000; Zigmond & Thornton, 1985). Considering that adults with low literacy skills or without a high school diploma are more likely to experience unemployment, live in poverty, and receive government assistance than their peers with higher literacy skills and higher levels of education (Mellard & Patterson, 2008), increasing and ensuring access to postsecondary education and training, including appropriate accommodations and support services, is critical to the social and economic success of families and communities (Gregg, 2009). While ABE programs do not typically have the licensed professionals on staff to provide appropriate diagnostic evaluations for their students, instructors and support staff can screen and refer students to diagnosticians for full evaluations based on screening results (Payne, 1998). In this article, the authors

provide an overview of procedures in Ohio ABE programs for screening and referring students for diagnostic assessment for LD, consider potential barriers to accessing such services as described in the extant literature, and present new data from a survey of Ohio ABE administrators querying their perceptions of barriers to diagnostic services. Additionally, the paper presents data collected from Ohio ABE programs on screening and referral for diagnostic assessment from 2005 through 2008 and explores the possible impact of professional development and state policy initiatives on changing screening and referral rates.

Learning Disabilities in Adult Populations

The prevalence of LD in school-age children has been well-documented in recent decades. Between 2006 and 2010, the percentage of students served under IDEA who had a specific learning disability varied only slightly, staying between 3.5 and 4.0 percent (Data Accountability Center, 2011). In a review of the literature on LD in adults, Corely and Taymans (2002) noted that no single study has yet determined a generally accepted prevalence rate among adults. They suggest, however, that an estimate of the prevalence of LD among the general adult population can be extrapolated from data on the incidence of LD among school-age children. As reported in the extant literature, estimates for the rate of LD in the ABE population range from 5% to 80% (Mellard, 1998; Ross & Smith, 1990; White & Polson, 1999). One unpublished survey of adult literacy programs in Kansas estimates a 29% incidence of LD (Patterson, 2008). Although the field of adult education has increased its awareness and understanding of LD in adult students, currently there is no systematic data collection that describes the prevalence of LD (Mellard & Patterson, 2008; Sparks & Lovett, 2009). Because it is not required by the National Reporting System (NRS; U.S. Department of Education [USDE], 2001) the federal system that holds accountable adult education programs funded under the Workforce Investment Act (WIA) of 1998 (Title II of P.L. 105-220), few states gather these data from their adult learners (Patterson, 2008). Moreover, an increased understanding of screening and referral in ABE and ABE programs could lead to a better understanding of student (and teacher) behaviors regarding referral for diagnostic assessment as well as the barriers to obtaining diagnostic assessment.

Screening for Learning Disabilities in Adult Populations

For the purposes of this article, learning disability screening tools are operationalized as instruments that can detect learning strengths and weaknesses and indicate potential LD but cannot provide a diagnosis of LD. They can identify areas that may need further exploration or evaluation, and may be interpreted to suggest a referral to a professional diagnostician. Screening tools can result in a false positive (i.e., a person is identified as possibly having a learning disability when, in fact, this is not the case) or a false negative (i.e., a person is not identified as possibly having a learning disability when, in fact, they may have a learning disability). These instruments can vary from a five-minute checklist to more in-depth assessments that can take one to two hours to complete. Screening tool results should be used in conjunction with other assessment tools to develop a clear understanding of the learner's academic needs and strengths. The more comprehensive screening instruments can (and should) also be used to inform classroom instruction in adult education programs.

Little research has been published on the screening instruments themselves or how they are being utilized by ABE programs nationally. The first author conducted an ERIC search using the search terms *screening*, *learning disability*, and *adult* delimiting to peer-reviewed studies. The search produced five results of which only two involved information relevant to screening adult learners for LD. In fact, in a recent review of the literature on services to adults with LD, Taymans et al. (2009) noted that, although there are recommended practices to screen adult learners for LD, "there is not a sufficient research base to support a set of valid and reliable practices" (p.10). The lack of published research limits the ability of professional development providers and state offices of adult education to provide high quality resources and professional development that can guide the practice of adult literacy instructors in the best use of screening instruments as tools for referral or to inform classroom instruction. Only to the degree that this screening and referral process is functioning and utilized will students with LD have access to the services and resources that can assist them in being successful in education and employment (Lancaster & Mellard, 2005; Patterson, 2008; Vogel & Holt, 2003).

Diagnostic Assessment for Learning Disabilities in Adults

A positive result using any of the available screening tools may result in a referral to a professional diagnostician, such as a clinical psychologist, for a full evaluation. Typically the evaluation will include an intelligence test, such as the *Wechsler Adult Intelligence Scale—Fourth Edition* (WAIS IV) (Wechsler, 2008), and an achievement test such as the *Woodcock Johnson® Psycho-Educational Battery—Revised* (WJ-III) (McGrew & Woodcock, 2001) or the *Wechsler Individual Achievement Test—Second Edition* (WIAT II) (Wechsler, 2005). Diagnosticians look for a discrepancy between intelligence and achievement, typically referred to as *unexpected underperformance*. The *DSM-IV* allows for a discrepancy of between 1 and 2 standard deviations (American Psychiatric Association, 2000). Because individuals with LD do not suffer from cognitive impairment but perform poorly in certain academic subjects, discrepancy models are intuitively logical (Kavale, 2002). The use of the discrepancy model for diagnosing learning disabilities in children, however, has many opponents who cite problems with, among other things, decisions about the amount of discrepancy necessary to warrant a diagnosis (Kavale, Kauffman, Bachmeier, & LeFever, 2009; Lovett & Gordon, 2005). It is possible, for example, for an individual to be diagnosed with a learning disability in one state and not in another, if the discrepancy models are different among the locations. Furthermore, IDEA 2004 no longer mandates the use of the discrepancy formula to identify LD in children birth to 21¹.

Limitations of the discrepancy model notwithstanding, evaluations conducted by a professional diagnostician can unlock important opportunities for students with LD. Only with a full and current diagnostic assessment can individuals access accommodations in the workplace, in ABE classrooms, on the GED, and in postsecondary education. Unfortunately, adult students, especially those with limited resources, face substantial barriers to obtaining the necessary diag-

1 IDEA 2004 states that "when determining whether a child has a specific learning disability ... a local educational agency shall not be required to take into consideration whether a child has a severe discrepancy between achievement and intellectual ability" ... a school "may use a process that determines if the child responds to scientific, research-based intervention as part of the evaluation procedures ..." (Section 1414(b) (6)). A thorough discussion of the implications of this change in identifying LD for adult learners is important, but beyond the scope of this article (see Colker, 2010 for further discussion).

nostic assessment (Pellegrino, Sermons, & Shaver, 2011). This can result in students not receiving the accommodations and support services to which they are entitled under the law, a disadvantage that students with access to adequate resources do not face.

Barriers to Obtaining Diagnostic Assessment

Common challenges faced in obtaining diagnostic services for ABE students are a lack of: (a) awareness of indicators of LD, (b) access to screening tools and training in their use, (c) access to diagnostic services, and (d) funds for evaluation (Ross-Gordon, Plotts, Joesel, & Wells, 2003). Polson & White (2000) indicated that the most prevalent barriers are related to lack of financial resources including limited budgets and lack of human resources, lack of training for staff, ineffective assessment tools, and an inadequate number of referral agencies. Even when referral agencies are available, many (if not most) clients served by adult education providers cannot afford the required fees, which range from \$500 to \$1500 in Ohio, but may be as high as several thousands of dollars in other states or regions.

Awareness of the challenges and barriers facing adult learners led the ABE program in Ohio to focus on the issue of LD and to implement policies, design professional development and offer technical assistance to providers on serving adults with LD. Data discussed later in this paper provide initial insight into the perceptions of ABE program administrators regarding barriers to diagnosis encountered by adult learners in their programs, and suggest that issues persist despite strong statewide emphasis that has made a positive impact on the number of students accessing services.

Policies and Professional Development on Learning Disabilities in the Ohio ABE System

The Ohio ABE state leadership system consists of four regional resource centers and one statewide center providing technical assistance, professional development, and instructional resources to ABE practitioners across the state. The Ohio ABE system has prioritized professional development related to serving adults with LD since 1998 and, as a state, has participated in two national projects developed through the National Adult Literacy and Learning Disabilities Center (1999): *Bridges to Practice: A Research-Based Approach to Serving Adults with Learning Disabilities* and more recently, *Learning to Achieve* in 2009 (<http://lincs.ed.gov/programs/learningtoachieve/learningtoachieve.html>).

Participants in both statewide trainings were primarily ABE instructors. Currently, state policy requires all ABE instructors to participate in a series of online webinars on disability-related legislation, learning disability screening, and referral for diagnosis. Instructors then must attend a full-day workshop on the following topics: definitions of LD, self-determination, explicit instruction, reading disabilities, and writing disabilities.

Accountability measures were also established by the state. In 2005, a state advisory committee developed policy recommendations that were submitted to and accepted by the state ABE director (see Appendix A). Since 2005, all ABE programs have been required to submit an annual plan explaining how they will address each of the state policies for serving adults with LD. To assist ABE administrators in addressing the state policies, the Central/Southeast ABE Resource Center created an online tool, called the LD Policy and Planning Guide (<http://www.tinyurl.com/ldguide>). In addition, since 2005, ABE administrators have been collecting data on screening and diagnosis (see Appendix B) that are reported in this paper. As previously mentioned, because it is not required by the National Reporting System, few states collect these data (Patterson, 2008).

State policy requires all Ohio programs to have a screening protocol in place. Programs can screen all students for LD, or—if only some students are screened—programs can develop a written policy that explains how students will be selected for screening. For example, programs may offer screening to students with consistent attendance who are not progressing after 90 days of instruction. Students can waive the screening if they choose and may select to be re-screened at any time. Ideally, screening should occur in a private room, one-on-one with the student. The screenings are typically conducted by instructional or support staff members who have participated in professional development on the relevant instrument.

Seven screening instruments are available to ABE programs in Ohio² (see Table 1): PowerPath® to Education and Employment (Weisel, 1998), Washington-13, Destination Literacy (Learning Disabilities As-

² There are other learning disability screening instruments available that can be used to screen Spanish-speaking adults (e.g., the Empire State Screening) but Ohio has decided not to screen students in ESOL classes because of the cultural and linguistic issues surrounding screening and diagnostic assessment (see McCardle, P., Keller-Allen, C., & Shuy, T, 2008; Peer & Reid, 2000; Shulman, 2002, for discussion).

Table 1

Learning Disabilities Screening Instruments Used in Ohio ABE Programs

Screening Instrument	Focus	Format	Development	Time to Administer
Adult Learning Disabilities Screening (ALDS)	5 categories: Demographic Information, Rating Scale, Inventory, Interview, Validity Check (for examiner)	4-part battery consisting of self-report paper-pencil items and an interview; Internet version available ^a	Screening battery for both the Rating Scales and the Inventory has been reported to be in an 85%-90% correct classification, respectively.	45 min
Cooper Screening of Information Processing (C-SIP) ^b	Employment history, Attention, Oral Communication Organizational Skills, R/L Discrim., Motor Skills, Reading, Vocabulary, Reading Comp.	Self-report, interview, word list, handwriting sample, math skills assessment	No validity information is given; no reliability or SEM information provided	Short and long forms available (45 min/1.5 hrs)
Destination Literacy	Math and reading assessments	Performance assessment, interview and self-report	No validity information is given. No reliability or SEM information is given.	1 hr
Payne Inventory	Series of integrated questions about education, employment, life-based activities, family and health	Interview	Research supporting development of instrument was conducted with a welfare clientele; thus, tool may not be valid with other populations; no temporal, interrater, or SEM reliability given; validity reported ^c	1.5 hrs

(Table 1, continued)

PowerPath® to Education and Employment ^d	Attention difficulties screening, visual and auditory functions; reading encoding and decoding; visual and auditory processing	Interview, 4-part battery, perceptual screening	Correlated with Woodcock-Johnson Psycho-Educational Battery and weighted to predict Woodcock-Johnson full-scale score; no reliability or SEM information given; validity information reported ^e	Up to 2 hrs
Screening Test for Adults with Learning Difficulties and Strategies for Teaching Adults with Learning Difficulties (STALD) ^f	Basic and perceptual screening, word identification test, and reading passages placement	Perceptual screening, word identification test, reading passages	No reliability or validity reported	45 min
Washington-13 Learning Need Screening Tool ^g	Difficulties in school, perceived problems with math, spelling, memory	Brief interview with 13 questions	Thirteen items from the Payne Inventory that were found to be particularly associated with a LD diagnosis 73% of the time.	30 min

Note. ALDS (Mellard, 1999); Destination Literacy (Learning Disabilities Association of Canada, 1999).

^aOnline version available at <https://www.kansasjoblink.com/ada/default.cfm>.

^bSee <http://www.learningdifferences.com/Main%20Page/C-SIP/C-SIP-Index.htm>

^cDESS Interim Report (p. 17): Using “Red Flag” cutoff correctly identified 64.3% of those with LD—errors were 3:1 false positive to false negative. Using “Pink Flag” cutoff, the overall accuracy decreased to 59.7%. From National Adult Literacy and Learning Disabilities Center (1999).

^dSee <http://www.powerpath.com>

^eUsed to screen participants in a literacy program for inclusion in a research study found 50 adults having a severe degree of LD. Additional assessments administered by a licensed psychologist found more than 85% of these to individuals to be diagnosed as LD (National Adult Literacy and Learning Disabilities Center, 1999).

^fEric Document ED287988.

^ghttp://www.ncwd-youth.info/assets/guides/assessment/AssessGuide_Chapter2.doc

sociation of Canada, 1999), Adult Learning Disabilities Screening (ALDS) (Lancaster & Mellard, 2005), Payne Inventory (Payne, 1997), Screening Test for Adults with Learning Difficulties and Strategies for Teaching Adults with Learning Difficulties (STALD), and Cooper Screening of Information Processing (C-SIP).

The Washington-13 is still predominantly used, accounting for more than 95% of screenings offered statewide (see Table 2). The Washington-13 includes thirteen items from the Payne Inventory that were found to be particularly associated with a learning disability diagnosis. It has several advantages that may influence its predominance; most notably, it is free, requires no training, and takes approximately 15 minutes to administer, if used without the follow-up questions. The test was validated on clients receiving state assistance in Washington State and was shown to accurately predict the presence of a learning disability 73% of the time in that population (Hercik, 2000).

Program administrators may use a secondary instrument to gather additional information in order to be able to refer appropriately for diagnostic services. Results obtained from a recent survey of Ohio ABE program administrators (Reynolds, Johnson, & Salzman, 2011) include the finding that 70% of respondents used an additional follow-up screening tool, often PowerPath® (48.5%), the C-SIP (13.8%), the ALDS (3.4%) and Destination Literacy (3.4%). The most oft-cited reason for conducting a follow-up screening however, was to gather more information for the classroom teacher (86.7%) (Reynolds et al., 2011). Although these more extensive (follow-up) instruments often require more than one hour to administer, they do provide more comprehensive and useful information for planning appropriate and effective instruction, including identifying specific areas of difficulty in visual processing, attention, reading, writing, and math.

Data and Method

As stated previously, Ohio ABE programs are required to screen students for LD and to refer students who screen positive to a licensed professional for diagnosis. Individual programs develop their own screening protocols, however, and so there is variation in terms of who is screened, who conducts the screening, and what instrument is used (Reynolds & Seymour, 2007). In an attempt to develop better understandings of screening, referral, and diagnosis

rates and processes among ABE students in Ohio, this study reports results from a descriptive analysis using survey data collected by the researchers along with extant data collected by ABE program administrators and made publicly available via the ABLELink database at the Ohio Literacy Resource Center at Kent State University. To provide additional context, demographic characteristics of enrolled Ohio ABE students who were screened (also obtained from the ABLELink database) are included in Table 3.

Extant data from ABLELink³ were used to describe variation in the screening instruments selected for use by ABE programs in the state. To characterize the extent to which screenings occur among Ohio ABE students, ABLELink data were used to compute the total number of students screened for LD (4-year total $N = 62,786$) expressed as a percentage of the total program enrollment over the same 4-year period ($N = 197,311$). To characterize the results of initial screening efforts and subsequent steps in the process, a parallel approach was taken to compute the total number of students screening positive (expressed as a percentage of the total number screened), the total number of students referred to a diagnostician (expressed as a percentage of the total number of students who screened positive), the total number of students refusing referral to a diagnostician (expressed as a percentage of the total number of students referred), and the total number of students diagnosed with a learning disability (expressed as a percentage of the total ABE enrollment). Results of descriptive analyses are presented in tabular forms (see Table 4).

Ohio ABE program administrators ($n=118$) were surveyed in fall 2009 in order to identify and describe their perceptions of the barriers to diagnostic assessment experienced by their adult students. Administrators were asked to rank the degree of challenge of various barriers on a 4-point scale (not a significant challenge, somewhat significant challenge, significant challenge, very significant challenge). The barriers included: (a) services are not located near to students, (b) cost for services are out of reach for students, (c) staff members are not aware of what services exist, (d) students do not want to access services, (e) staff members do not have time to assist students with accessing services. Survey data were collected via an online survey and results are reported in tabular form (see Table 5).

³ The study utilized ABLELink data from fiscal years 2005 – 2008 because the focus of the investigation was the impact of professional development and policies that had been implemented in 2006.

Table 2

Learning Disabilities Screening Instruments Used in Ohio ABLE Programs

Instrument	2005		2006		2007		2008	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Washington-13	9,207	0.96	17,339	0.96	14,941	0.95	17,305	0.97
PowerPath®	393	0.04	526	0.03	497	0.03	220	0.01
Payne Inventory	2	0.00	100	0.01	229	0.01	277	0.02
STALD	34	0.00	38	0.00	55	0.00	51	0.00
Cooper	2	0.00	0	0.00	25	0.00	0	0.00
Destination Literacy	0	0.00	0	0.00	10	0.00	7	0.00
ALDS	0	0.00	4	0.00	0	0.00	0	0.00
Total Screenings	9,638		18,007		15,757		17,860	

Note. *n* = total number of screenings administered; % = percentage of total initial screenings administered.

Results

Ohio ABLE student screening reports from fiscal years 2005-2008 were aggregated by year and charted. Results illustrate a notable increase in the number of students screened as a percentage of total program enrollment over the four fiscal years. The percentage of students being screened increased substantially (from 18.95% in 2005 to 37.19% in 2006) and remained high in subsequent years. The total number of referrals to diagnostic services is also reported for each of the four years, as were total number of positive diagnoses. As indicated in Table 4, total enrollment was relatively consistent across time. Prior to the emphasis on service to students with LD and professional development for ABLE providers in 2005/2006, the percentage of students tested was relatively low compared to all of the years following (see Table 4). Equally if not more importantly, the number of students who screened positive has increased each year over the four years. Worth noting, however, the percentages of students obtaining a diagnosis decreased in 2007 and 2008.

The survey results indicated that more than 59% of responding Ohio ABLE program administrators (*n*=44) believed that the cost of the diagnostic assessment was the most significant barrier for ABLE students in accessing diagnostic services (see Table 5). Time to administer screening instruments and counsel students about referral was ranked as a significant challenge by more than 38% of the respondents. Lack of awareness was ranked as a somewhat significant challenge by a majority of respondents (58%), as was a lack of desire to obtain a diagnostic assessment (43%) and lack of proximity to diagnosticians (34%). This final challenge is particularly acute in rural communities in Ohio and nationally where proximity limits access to professional diagnosticians while concurrently increasing costs (cf. Levin, Manship, Chambers, Johnson, & Blankenship, 2011).

Table 3

Demographic Information for Enrolled Ohio ABE Student Participating in Screening

	Fiscal Year							
	2005		2006		2007		2008	
	Female	Male	Female	Male	Female	Male	Female	Male
American Indian or Alaskan Native	44	36	44	46	37	48	60	54
Asian	71	26	81	31	86	41	123	1460
Black or African American	1771	1037	1897	989	2182	1149	2273	142
Hispanic or Latino	172	114	128	108	185	126	205	10
Native Hawaiian or Other Pacific Islander	9	5	9	6	13	6	12	3517
White	2798	1781	3194	2131	4179	3042	4532	56

Note. The numbers in the table reflect the number of enrolled Ohio ABE students who were screened for LD (and do not include those who waived the screening).

Discussion

The Ohio ABE state leadership system has offered professional development on serving adults with LD since 1998. A notable increase in screening and referral rates occurred in 2005, when LD became a clear state priority. State policies were instituted requiring ABE programs to develop plans for offering LD screening to all students entering ABE programs and offering referral to those who screen positive for a potential learning disability. Also in 2005, an online guide was constructed to support programs in complying with state policies. Professional development workshops on LD in the ABE population became mandatory. The subsequent fiscal year shows the result of intensive professional development, emphases in state level policies and additional program support.

While data from subsequent years show a reduction in screenings from 2006, the level did not return to pre-professional development levels.

It is important to note that even as the rate of screening for LD in ABE programs has increased over the baseline year, the rate of student referral for full diagnostic evaluation has remained low. A number of factors could be suppressing this rate; these include teacher attitudes toward LD, lack of understanding of the referral process on the part of teachers or program administrators, lack of awareness of local diagnosticians, lack of local diagnosticians, lack of affordable services, as well as student transportation issues. Another issue of concern suggested by results is the increasing percentage of students choosing not to seek full diagnostic evaluation after being referred (see Table 4). While the reasons Ohio ABE students are

Table 4

Ohio ABLÉ Students Screened, Referred for and Receiving Diagnosis for Learning Disability

Measure	2005	2006	2007	2008
Total Ohio ABLÉ Enrollment	50,869	48,417	48,209	50,537
Number screened (as % of total enrolled)	19%	37%	33%	35%
Number screened positive (as % of total <i>n</i> screened)	11%	12%	14%	13%
Number referred to diagnostician (as % of total screened positive)	7%	7%	9%	8%
Number refusing referral to diagnostician (as % of total referred)	19%	30%	18%	58%
Total number diagnosed with LD	38	44	35	41
Total receiving diagnosis (as % of total enrollment)	.075%	.091%	.073%	.081%

Note. The percentage of ABLÉ enrolled students diagnosed reflects the number of students receiving a diagnostic assessment as the result of being referred following a screening that indicated a likelihood of a learning disability. It does not include the number of students who entered an ABLÉ program with an existing diagnosis.

Table 5

Ohio ABLÉ Directors Rating of Barriers to Obtaining Diagnostic Assessment (2009)

Barrier	Rating Scale ^a				<i>M</i>	<i>n</i>
	1	2	3	4		
Location	15.9	34.1	27.3	15.9	2.46	44
Cost	11.4	9.1	18.2	59.1	3.28	44
Lack of Awareness	18.6	58.1	16.3	4.7	2.07	43
Lack of Student Interest	11.4	43.2	31.8	11.4	2.44	44
Staff Time	15.9	29.5	38.6	13.6	2.51	44

Note. *n* = Number of Ohio ABLÉ program directors responding. Total number of ABLÉ directors in Ohio in 2009 was 66. Numbers shown in rating columns are percentage of total respondents.

^a1 = Not significant; 2 = Somewhat significant; 3 = Significant; 4 = Very significant.

not pursuing a diagnostic assessment following a positive screening for a LD remain unclear, it is reasonable to speculate that barriers of access and finances cited in national studies (Polson & White, 2000; Ross-Gordon et al., 2003) are contributing factors—and, perhaps, that such barriers might be exacerbated for rural students (Levin et al., 2011).

Worth further investigation is how the use of a second and more comprehensive screening instrument might impact the referral process. ABE teachers who employ a follow up screening may see a connection between assessment of their learners and instruction, demonstrating an understanding of the benefit of the screening instruments to guide instruction as well as to provide an additional filter for potential referrals. With additional (and more comprehensive) information, teachers may be less inclined to refer students for costly and time consuming diagnostic testing because they would have the appropriate information needed to inform their instructional interventions. ABE students may feel less inclined to pursue formal diagnostic assessment after completing a comprehensive screening and subsequently increasing their understanding of why and how they struggle academically.

Furthermore, the number of students obtaining a diagnosis after being referred for an assessment remains disproportionately low: less than .1% of the total ABE population obtained a diagnosis each year between 2005 and 2008. Such a low diagnosis rate could be interpreted in two entirely different ways. One interpretation would be to suggest that the additional resources allocated to screenings may not be producing sufficient results to warrant their cost. An alternate interpretation of results would be to suggest that specific factors—programmatic, procedural, individual—suppress this percentage. That is, barriers related to policy and finances are preventing individuals with disabilities from being diagnosed and offered appropriate accommodations. Either interpretation would be conjectural at this point, but both point to the importance of further investigation.

Conclusions

This article presents results from a descriptive study investigating learning disability screening practices in Ohio ABE programs over a four-year period. Results document that screenings have increased (particularly following the implementation of statewide policies and

professional development), but the overall number of students who were referred and then received a diagnostic assessment has remained low. Program administrators identified assessment costs as a significant barrier to obtaining diagnostic assessment.

If, as suggested by the results discussed within this study, cost is a primary barrier to diagnostic services and to formal accommodations in postsecondary education, adding diagnostic assessment to the evaluations that are covered in the student health insurance plans is one way that postsecondary institutions can increase student access to these services. Recognizing that many nontraditional and adult learners may not use the student health plans, postsecondary disability service providers should consider building partnerships with professionals who can offer affordable (sliding scale) diagnostic services. These partnerships will only be utilized, however, if students are aware of the services and understand the benefits of obtaining a diagnosis, reinforcing the importance of clear communication and outreach to the general student body that targets incoming students and nontraditional learners.

This study suggests that adult students may exit ABE programs with undiagnosed LD. Indeed, Gregg (2009) states of nontraditional learners that “this population represents a significant number of unidentified individuals” (p.8). If these students choose to transition to postsecondary education it is possible that they may be enrolled for several semesters before they choose to (or can) access educational accommodations. With these students in mind, implementing a universal design (UD) approach to instruction in adult education programs as well as in postsecondary education can ensure that all learners, regardless of ability, diagnosed or not, have access to instruction (Gregg, 2009; Stahl, 2011). Disability service providers can provide professional development to faculty and staff regarding implementing UD. It is widely recognized that professionals at most postsecondary institutions, however, are already struggling with large case loads and inadequate staffing (National Council on Disability [NCD], 2003). Effective implementation of UD will require an institutional commitment to providing universal access to learning (not simply accommodations required under ADAAA) and sufficient staffing of disability service offices to provide awareness, training, and support services to faculty, students, and staff.

Implications for Future Research

Additional research is needed to disclose and understand the reasons for the low rates at which students in ABLE programs are diagnosed with a learning disability. Several issues likely exist: lack of affordable diagnostic services, lack of knowledge of the benefits of obtaining a diagnostic evaluation, and proximity to and availability of professionals trained in assessing LD in adults. Further research is needed to understand the impact of professional development regarding LD on teacher behaviors related to the referral process⁴. Furthermore, it is possible that teachers' or ABLE administrators' attitudes toward disabilities in general and diagnosis specifically have an effect on the rate at which students within specific programs are referred for formal diagnostic assessment. Well-designed attitudinal surveys of ABLE program administrators could begin to uncover connections between teacher attitudes and rates of referral.

As mentioned previously, screening instruments—particularly comprehensive or follow-up instruments—can provide relevant information for the classroom teacher and adult learner. Their use should not be limited to a step in the process toward a diagnosis. ABLE teachers can (and should) use the results from the screenings to help their adult learners better understand their challenges and strengths. This can also enable teachers to better target their instruction to provide appropriate interventions, while being appropriately cautious in recognizing that their use is not a replacement for diagnosis by a trained professional and explaining that the adaptations that they may provide for learners in the ABLE classroom do not allow individuals to be accommodated in other settings.

Finally, Patterson (2008) suggested further research on the relationship between policies related to serving adults with disabilities and outcomes on a regional and national scale. This current effort is a necessary but insufficient step in that analysis. Future research efforts should look at individual states' policies and the relationship between policy implementation and identification of LD. Ultimately, a deeper understanding of the ABLE population will result in increased access to services and resources which will help adult learners with LD succeed achieve their educational and employment goals.

⁴ As noted earlier, this study utilized ABLELink data from fiscal years 2005 – 2008 because the focus of the investigation was the impact of professional development and policies that had been implemented in 2006. The authors suggest and recommend a further analysis of data from subsequent years and an expansion of the analysis to include data from other states.

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Appendix A

2010 Ohio ABLE Special Needs Policies

Policy 1.0: ABLE programs will not discriminate against individuals with disabilities and will ensure that all services are accessible. Federal law requires that ABLE programs meet the administrative requirements of the Americans with Disabilities Act.

1. Provide the name of the individual who is your designated ADA Coordinator and explain his or her responsibilities.
2. Type your Equal Opportunity Statement and indicate where it is provided.
3. Describe your grievance policy for staff and clients.
4. Describe your process for conducting a Self-Evaluation of your program to determine its physical and educational accessibility.
5. Describe your plan for making your program both physically and educationally accessible.

Policy 2.0: ABLE programs will have a documented learning disabilities screening process in place, which will include the following elements:

1. At what point(s) in the Student Experience Model (SEM) is (are) screening for learning disabilities screening offered?
2. What learning disabilities screening instrument(s) is used?
3. What consistent criteria determine who is offered a learning disabilities screening?
4. Who conducts the learning disabilities screening?
5. How is training provided to staff administering the learning disabilities screening?
6. How are the results of the learning disabilities screening shared with students?
7. How will screening information be used to modify and adapt instruction for the students?

Policy 3.0: ABLE programs will maintain a signed waiver if a student declines a learning disability screening

1. What is your procedure for obtaining a waiver?
2. What is your procedure for storing waiver information?

Policy 4.0: ABLE programs will keep confidential all information related to students' disclosure and documentation of disability and/or screening information. In the case of the latter, a program will obtain a signed and dated Release of Information from the student in order to share screening information.

1. What is procedure for maintaining confidentiality of students' records?
2. What is your procedure for obtaining a Release of Information (when sought and how shared)?

Policy 5.0: ABLE programs will maintain current information about professional diagnosis, vision screening, and hearing screening and make it accessible to students with suspected, disclosed or diagnosed learning disabilities and/or vision or hearing difficulties.

Programs serving ESOL should also respond to the questions below.

1. What is your procedure for identifying local professionals and/or agencies?
2. What is your procedure for offering this information to students?

Policy 6.0: ABLE programs will provide instructional adaptations to assist students as needed.

1. What are the types of adaptations you frequently provide in the classroom?
2. What is your procedure for introducing the adaptations to the student?
3. What is your procedure for determining with the student if the adaptations are helpful to the students?

Policy 7.0: ABLE programs will provide accommodations to students with diagnosed learning disabilities to help ensure they have equal access to services.

1. List the types of accommodations your program provides based on the results of the student's diagnostic testing.
2. Provide assurances that approved accommodations may be used by students in all instructional and testing situations.
3. What is your process for documenting use of accommodations and their effectiveness (i.e., success or failure) and how they are applied in instructional and testing situations?
4. Provide assurances that accommodations are provided for students with a documented disability unless they pose an undue hardship for the agency.
5. Provide a description of your process for entering accommodation information into ABLElink.

Policy 8.0: ABLE programs will have sufficient number of staff members adequately trained to understand the legal requirements surrounding service to students with learning disabilities, to administer LD screenings and to plan and implement instructional adaptations and accommodations.

1. List staff members who have attended the LD Core Training Series.
2. What staff members have attended other LD-related training (specify the training)?
3. What training will be pursued in the next program year? (note: make sure that staff training needs noted in this plan are reflected in the PPDPs and IPDPs)

Policy 9.0: Programs will collect data for input into ABLElink per OBR requirements.

1. Provide assurances that screening, referral, and accommodation information will be recorded on the Special Needs Tracking Form.
2. What procedures will you put into place to ensure that required data are collected and entered into ABLElink?

Policy 10.0 ABLE programs will annually update their Learning Disabilities Plan per requirements established by the Ohio Board of Regents ABLE Program.

1. What is your plan for annually updating your LD Policy and Planning Guide?

Appendix B

SPECIAL NEEDS FORM SFY 2012 (2011-2012)

Name _____
 Last First M.I. Maiden or other former name
 Social Security #: _____ GED Security #: _____ Site: _____ Instructor: _____

SCREENING					REFERRAL AND DIAGNOSIS				
Screening:	Offered	Conducted ¹	Refused ²	Date	Information about assessment of:	Offered	Given	Refused ³	Date
Learning disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Learning disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hearing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Hearing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Learning disability instrument given: <input type="checkbox"/> ALDS <input type="checkbox"/> Cooper <input type="checkbox"/> Destination Literacy <input type="checkbox"/> Payne Inventory <input type="checkbox"/> PowerPath <input type="checkbox"/> STALD <input type="checkbox"/> Washington 13 Screening results indicate probability of LD: <input type="checkbox"/> Yes <input type="checkbox"/> No ¹ Student signed Screening Consent Form: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A ² Student signed Waiver of Consent Form: <input type="checkbox"/> Yes <input type="checkbox"/> No (only necessary if screening services are refused)					Results of referral/diagnostic evaluation: <input type="checkbox"/> No evidence of learning disability, hearing, or vision problem <input type="checkbox"/> Specific learning disability <input type="checkbox"/> Reading <input type="checkbox"/> Receptive/expressive language <input type="checkbox"/> Math <input type="checkbox"/> Phonological <input type="checkbox"/> Written expressive <input type="checkbox"/> Not otherwise specified <input type="checkbox"/> Hearing problem Hearing aids <input type="checkbox"/> recommended <input type="checkbox"/> received <input type="checkbox"/> Vision problem Glasses or contacts <input type="checkbox"/> recommended <input type="checkbox"/> received ³ Student signed Waiver of Referral Information: <input type="checkbox"/> Yes <input type="checkbox"/> No (only necessary if referral services are refused)				
INFORMATION RELEASED TO OTHER AGENCIES					COMMENTS/ADDITIONAL INFORMATION				
Student signed Release of Information Form: <input type="checkbox"/> Yes <input type="checkbox"/> No (only necessary if information is released to others)					(include any diagnosis, not listed above, for which an accommodation was provided)				
EDUCATIONAL ACCOMMODATIONS (FOR DIAGNOSED STUDENTS ONLY)									
Accommodations provided: <input type="checkbox"/> Colored overlays <input type="checkbox"/> Audiocassette* <input type="checkbox"/> Ear plugs <input type="checkbox"/> Braille* <input type="checkbox"/> Graph paper for math <input type="checkbox"/> Extended time* <input type="checkbox"/> Large print <input type="checkbox"/> Private room* <input type="checkbox"/> Magnifying strip <input type="checkbox"/> Scribe* <input type="checkbox"/> Seating near natural light <input type="checkbox"/> Supervised frequent breaks* <input type="checkbox"/> Straight edge <input type="checkbox"/> Talking calculator* <input type="checkbox"/> Other: _____ * Prior approval needed for GED GED accommodations form completed? <input type="checkbox"/> Yes <input type="checkbox"/> No									

PRACTICE BRIEF

AccessDesign: A Two-Day Workshop for Students with Disabilities Exploring Design Careers

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Abstract

A two-day pilot workshop called Access to the Design Professions for People with Disabilities (*AccessDesign*) was conducted for high school and college students with disabilities in Seattle. The goal of the workshop was to increase the pipeline of design professionals with disabilities by recruiting students with disabilities into postsecondary design education. It was supported by the DO-IT Center and a grant from the National Endowment for the Arts (NEA), as well as participating organizations and individuals. The two-day workshop highlighted design education options one day and design careers the next. Evaluation data suggest that participant understanding and interest regarding design fields and knowledge about accommodations increased. Students enjoyed opportunities to network and were particularly interested in design examples related to accessibility. They were also interested in learning more about general issues related to college such as admissions and financial aid. These lessons could improve future programs offered by the DO-IT Center as well as other practitioners.

Keywords: Disability, higher education, recruitment, design careers, career exploration, transition

Individuals with disabilities experience far less career success than their nondisabled peers (National Council on Disability and Social Security Administration, 2000; National Science Foundation, 2002; Office of Disability Employment Policy, 2001). They are less likely to complete postsecondary education and pursue academic studies in science, technology, engineering, and mathematics (STEM) and experience a higher drop out rate (National Science Foundation, 2002, 2006; SRI International, n.d.) than their nondisabled peers. STEM includes design fields such as those in architecture, graphic design, industrial design, landscape architecture, and web design.

Success stories of individuals with disabilities engaged in STEM fields demonstrate that opportunities do exist for those who develop academic, technical, and self-determination skills and devise strategies to circumvent barriers imposed by inaccessible facilities, instruction, and resources; inadequate accommoda-

tions; and lack of encouragement and access to role models (DO-IT, 1993-2011; Ostroff, Limont, & Hunter, 2002; Stern & Woods, 2001). Unless access issues are adequately addressed by the institution, challenges related to physical access and inaccessible information technology (IT) may be faced by those with mobility impairments; challenges related to print and multi-media access may be faced by individuals with visual impairments; audio content may create problems for students with limited hearing; and resources provided in a single format may produce difficulties for students with learning or attention disabilities. Each of these challenges has well-documented solutions, such as guidelines for making computers and online resources accessible to everyone (World Wide Web Consortium, 2008).

Problem Addressed by Pilot Workshop

Although some programs, including those offered by the DO-IT Center at the University of Washington

(UW), promote STEM academic and career fields to students with disabilities, few opportunities exist to expose students with disabilities to specific careers in design fields and to reasonable accommodations to ensure access to these careers. In June 2011, DO-IT partnered with Access to Design Professions, Institute for Human Centered Design, (IHCD) Boston, MA to conduct a two-day workshop called Access to the Design Professions for People with Disabilities (*AccessDesign*) so that students with disabilities could explore a wide variety of design careers and the education needed to pursue these careers. It was supported by the DO-IT Center, a grant from the National Endowment for the Arts (NEA), and participating organizations and individuals.

The workshop was open to all interested students with disabilities in high school or college and advertised through DO-IT's existing, extensive networks of high school, community college, and university students with disabilities and educators. For example, invitations were distributed to two DO-IT e-mentoring communities, where students with disabilities engage via email with mentors and DO-IT staff as they move through critical junctures to degrees and careers. Through these communities students learn about internships and scholarships, self-determination skills, and the availability of advisors and other support. Invitations were also sent to local high school teachers and college disability services professionals.

Four high school students and eleven college students attended the workshop. At least eight of the students were either in high school or in college but undecided on their major. Six students had mobility impairments; four students had learning disabilities; three students had attention deficits; one student had a hearing impairment; and one student had a traumatic brain injury. Eight of the students were female and seven were male.

Strategy

One day of the workshop focused on education options and another on career options in design topics (see Figure 1). During the first day of the workshop, held on the UW campus, participants learned about academic programs in design fields at UW and other institutions, including community colleges. Over the course of the day, students met with advisors and faculty in design fields, talked to current students and recent graduates of design programs, learned about other campus resources, and participated in a hands-on design activity to learn about accessibility and universal design.

The second day of the workshop took place at an architecture firm where students learned more about careers and career paths in design fields. In addition to a panel presentation of professionals from a variety of backgrounds and informational interviews with professionals in many design fields, students toured the facility and saw several demonstrations of technology currently being used in architecture firms.

The two-day workshop provided students with many experiences in which they could learn about academic programs, campus resources, design technology, and career paths in design fields as well as network with other students and professionals. Students also learned about strategies for confronting accessibility challenges from students, design professionals, and disability services staff.

Participating faculty and professionals were invited to join either of two peer groups. The first was the STEMEd Community of Practice (CoP) of K-12, consisting of postsecondary educators interested in promoting the participation and success of students with disabilities in STEM fields. The second was the Industry and Career Services CoP, populated with employers and career services staff interested in increasing the opportunities and success of people with disabilities in internships and careers, especially those in STEM fields. Thirteen of the presenters joined one of the CoPs. On these email discussion lists, topics for discussion have included universal design, informal science education, and disability disclosure. Similarly, student participants continue to engage in DO-IT's e-mentoring communities. Two participants who had not previously been members of an e-mentoring community chose not to join one.

Participant Feedback

Qualitative Data

At the conclusion of the workshop, students wrote thank you notes to presenters. In this correspondence, several students expressed their enthusiasm for the connections that they made and requested stationary to write to more than one presenter. In addition, comments on post-workshop surveys suggested increased participant awareness of the diversity of career options within design as a result of the workshop.

Quantitative Data

Students were asked to complete a survey before and after the workshop. Ten completed the first survey,

Access to the Design Professions for People with Disabilities

Day 1 – University of Washington Campus

9:15 – 10:15	Learn about Design Majors and Degree Programs from Faculty and Advisors
10:30 – 11:45	Panel of Students & Recent Graduates in Design Fields
11:45 – 12:45	Lunch
12:45 – 2:45	Investigating Entryways Activity
3:00 – 4:00	Resources on Campus

Day 2 – Architecture Firm

9:00 – 9:15	Welcome
9:15 – 10:30	Panel of Professionals in Design Fields
10:30 – 12:00	Firm Tour & Demonstrations of Technology
12:00 – 1:00	Lunch
1:00 – 2:30	Informational Interviews with Professionals
2:30 – 3:30	Industrial Design of Mobile Phones
3:30 – 4:00	Thank You Notes, Evaluation, and Concluding Remarks

Figure 1: AccessDesign Workshop Agenda

and seven completed the second one. No identifiers were included on the surveys, but with the small number of participants, using the demographics (sex, race, year in school, high school or college, disclosure of a disability), post surveys could be matched with pre surveys, permitting repeated measures analysis of variance.

With such a small number of participants, the power to detect a statistically significant change in any of the outcome variables is limited. For this reason, both changes reaching statistical significance ($*p < .05$) are noted as are changes that seem to be trending toward significance ($^{\dagger}p < .10$).

Figure 2 shows the percentage of participants indicating that they “agree” or “strongly agree” that they are interested in each career. This figure shows that the workshop significantly enhanced the participants’ interest in careers in urban planning ($F(1,6)=15$; $p < .01$) with trends toward enhanced interest in landscape architecture and industrial design ($F(1,6)=4.5$; $p < .10$). Interest in graphic design and interior design may have diminished somewhat, though these changes did not approach statistical significance at $p < .10$.

Participants were asked whether they knew what accommodations they needed to be successful in college or in a design field and how to request a needed accommodation (see Figure 3). Most of the participants already knew what accommodations they needed to be successful in college and how to request them when

they entered the workshop. All of the participants knew what they needed for college and how to request an accommodation when exiting the workshop. Not quite half of the participants knew what accommodations they would need to be successful in a design field and this figure doubled by the time they left the workshop ($F(1,6)=4.5$; $p < .10$).

Lessons Learned and Replication

Organizers of the *AccessDesign* workshop made the following observations regarding the parts of the workshop that were the most beneficial to student participants.

- Students enjoyed the opportunities to network and took advantage of the informational interviews and other chances to talk to professionals.
- Some students brought examples of their art or design work to show others, which served as a starting point for conversations with design professionals.
- Students were particularly interested in the role that design professionals play in making the world accessible to individuals with disabilities.

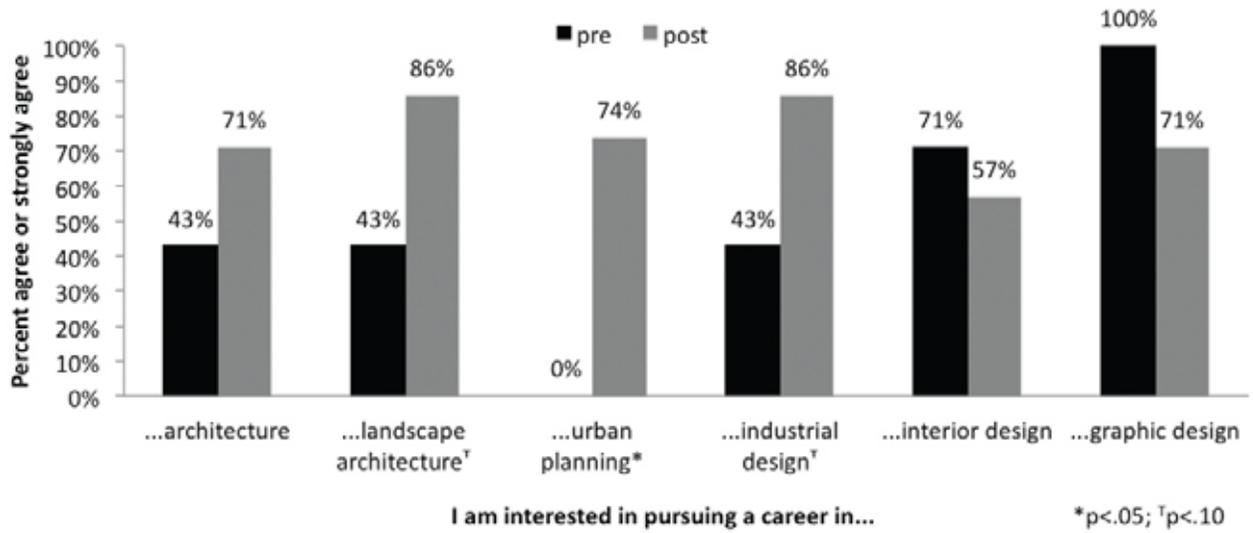


Figure 2. More students were interested in urban planning, landscape architecture, and industrial design after the workshop.

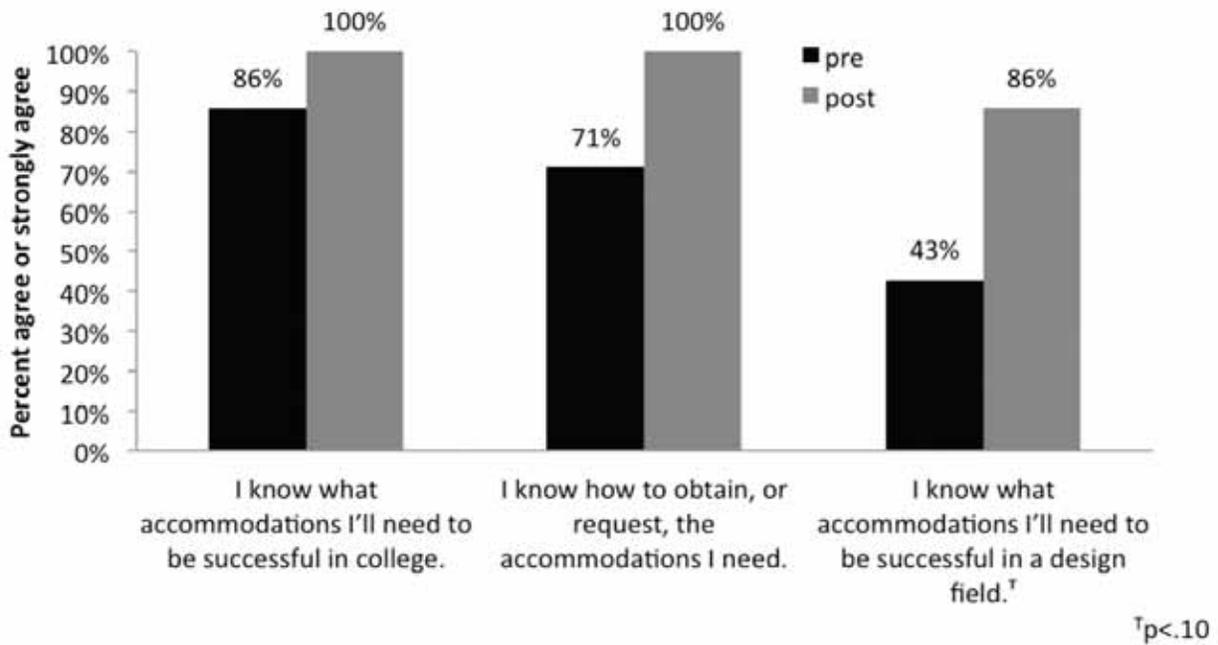


Figure 3. Most students were aware of the accommodations they will need in college; less so those they will need in the field.

- In addition to the information about design degree programs, students were interested in learning more generally about college including the application process, disability services, and financial aid.

Universities and other groups could replicate an event similar to *AccessDesign*. Partnerships between education institutions and design professionals are important so that students can be exposed to information about training and career options. Connect with educators, including high school personnel, who can help to recruit students with disabilities who might be interested in design fields. Include opportunities for students to network. These interactions can be facilitated by suggesting topics for discussion or encouraging students to bring examples of their work. Encourage design professionals to include examples relevant to accessibility. In addition, include general information about attending college. Consider contacting professional organizations or local organizations who do work related to disability to locate professionals with disabilities to participate.

Implications and Further Information

The results of the pilot workshop suggest that some students with disabilities are eager to learn about academic and career options in design fields. Providing information about both careers and academic requirements, engagement with professionals in design fields, and knowledge about potential accommodations helps students visualize themselves in design careers and how they might get there. Organizations planning similar events can benefit from the student feedback and lessons learned from the *AccessDesign* workshop.

Some of the students who participated in *AccessDesign* have participated in a longitudinal tracking study conducted by DO-IT. Follow-up with these students related to the longitudinal study could offer further evidence about the impact of the workshop on participants' education and careers. If future *AccessDesign* workshops are held, additional data could be collected about the effects of the workshop on participants' self-determination skills and strategies for any encounters with potential barriers.

Further information can be found at the *AccessDesign* web page at <http://www.washington.edu/doi/stem/access-design.html>.

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BOOK REVIEW

Edlyn Vallejo Peña
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Harbour, W. S., & Madaus, J. W. (Eds.) (2011). *Disability services and campus dynamics*. San Francisco: Jossey-Bass.

Students with disabilities are accessing higher education in greater numbers across the United States, changing the landscape of campus policies and cultures. The edited volume by Harbour and Madaus, *Disability Services and Campus Dynamics* (2011), is a welcome addition to the small but growing body of literature that weaves together discussions about disability services, accommodations, and campus dynamics. While disability services are still under-recognized in “books covering both the history of higher education, and disability rights and history” (p. 5), this publication helps to fill the gap. *Disability Services and Campus Dynamics* comprises ten chapters written by 17 authors, most of whom direct disability centers at universities across the United States, some whom teach in disability studies departments, and a few whom practice disability law. Though the chapters are authored by individuals who are intimately involved in disability services or accommodations, the book is written for a broader audience that includes administrators and faculty members campus-wide. The contributing authors structure each chapter by including a brief introduction to the chapter’s topic, a thematically organized narrative about the topic, and a concluding summary.

Chapter 1 establishes a foundation for the book by reviewing the history of disability services, from 1864 to the present. Madaus presents a historical timeline, illustrating a century and a half of great change and growth for postsecondary students and professionals. After exploring historical events and policies that have defined disability services, Madaus examines the current landscape and emerging trends in the field. These trends include the growing number of college students with recognized learning and psychiatric disabilities, as well as the need for enhanced support to make student learning more accessible via technology.

In Chapter 2, Korbel, Lucia, Wenzel, and Anderson focus on the importance of collaborations between disability services and other campus programs and entities. The chapter begins with a description of emerging populations with whom collaboration with disability services is warranted. These groups include students with Asperger’s syndrome; gay, lesbian, bisexual, transgendered, or questioning (GLBTQ); veterans; students with chronic illness; student athletes; and international students. According to the authors, disability services professionals should be assigned to serve as liaisons to various campus units that support emerging populations. Disability service liaisons can collaborate and exchange ideas with offices such as Admissions, Health Services, Athletics, and Study Abroad. Korbel, Lucia, Wenzel, and Anderson also share ideas for outreach-focused programming that can ease students’ transition from high school or community college to four-year institutions. While the recommendations advanced by the authors show promise, what is not addressed in the chapter is how disability service providers can gain support, time, and resources to implement such collaborative efforts across campus units.

Chapter 3 makes a compelling case for framing “disability services as both a legal and ethical obligation” (p. 27) for all postsecondary administrators and faculty members. Cory writes much of the chapter from a social justice perspective. As Cory describes topics such as accommodations, campus trainings, alternative media, and emerging populations, she urges the reader to consider disability issues as a systemic concern rather than one that focuses on individual students. This framing leads to ideas and practices aimed at community responsibility for inclusion rather than placing the onus of responsibility for inclusion and accessible learning on the students with disabilities

alone. In one example, Cory urges faculty members to support students with print-related disabilities or visual impairments by being “vigilant to ensure that their electronic resources are marked up in ways that increase access rather than limit it” (p. 31).

While Chapter 4 is geared toward educating administrators about implementing universal design principles in instructional technology, its message is relevant to faculty members who teach students with disabilities. Edyburn offers a wealth of resources and ideas about effective use of technology for student learning, calling for a shift in administrators’ thinking about learner differences. The idea that “we should not think about students as being disabled, but rather consider the curriculum disabled, as it poses barriers to access, engagement, and success” (p. 38) is not a new one but is still progressive. As Edyburn effectively argues, this kind of reframing can guide changes to educators’ instructional practices in more responsive ways.

In Chapter 5, Fuecker and Harbour address the needs of the often-forgotten constituents who also come to campuses with disabilities: faculty and staff. The authors note that up to 20% of faculty and staff in postsecondary institutions have a disability or chronic health condition that requires support and accommodations. The chapter highlights the University of Minnesota (UM) as a case study in which employees are provided support and accommodations under campus disability services. The case study is instructive, as it covers the establishment, organization, and case management of services at UM. Fuecker and Harbour conclude with recommendations to colleagues on other campuses who wish to implement similar forward-thinking employee services.

Discussions about legal challenges and compliance issues comprise Chapter 6. Heyward provides an in-depth exploration of ADA amendments, increasing numbers of students with psychiatric disabilities, and access to technology. In a particularly informative section on psychiatric disabilities, Heyward argues that postsecondary institutions often mismanage complex situations involving students with these disabilities. Such errors, according to the author, reflect a lack of understanding about compliance obligations, often resulting in mistakenly “providing any and all accommodations requested, or using the mere existence of the disability to justify a determination that the individual is not qualified” (p. 61). After reviewing four common pitfalls that universities make in response to

such situations, Heyward concludes that the “traditional service model is broken” (p. 61). The chapter’s most significant contribution is its presentation of key strategies to develop a new model of service delivery for students diagnosed with psychiatric disabilities. The new model includes recommendations such as assigning intervention teams that involve mental health professionals and legal experts to lead complex cases and giving decision makers in particular cases access to appropriate experts in FERPA and ADA/504.

In Chapter 7, Lundquist and Shackelford focus on risk management related to disability issues. The revealing section on lessons learned points to cases in which colleges and universities did not respond appropriately when students presented a risk to others or themselves. As a consequence, the students in question or their families took legal action against the institutions and either won or settled out of court. One example involved parents who “sued MIT for \$27 million for the suicide death of their daughter and later settled for an undisclosed sum” (p. 68). These eye-opening accounts emphasized the need for more proactive risk management strategies. Lundquist and Shackelford offer risk management protocols that answer this call, from establishing a threat assessment team to considering alternatives for suspension or withdrawal.

Chapter 8 makes a valiant attempt to understand students with disabilities from a student development perspective. Hadley’s efforts are worthwhile, but the existing literature on student development theory for students with disabilities from which she drew is minimal at best. Thus, by no fault of her own, Hadley’s chapter itself is brief and draws from theorists who are foundational to student development theory (i.e., Astin, Tinto, Chickering) in general, but not to students with disabilities in particular.

In Chapter 9, Stodden, Brown, and Roberts share their experiences with developing an institutional climate assessment. Though conducting an assessment of campus climate is typically viewed by administrators as a daunting task, the authors’ descriptions of measurements and the various phases of assessments are encouraging. By using concrete examples, Stodden, Brown, and Roberts effectively explain that assessing campus climates to create a more supportive and inclusive environment for students is vital and doable. The authors successfully advance the book’s conversation about shifting the responsibility of inclusion and accessibility from disability services to the entire institution

by urging college deans and professors to utilize climate assessments in an effort to enrich institutional action.

Chapter 10 departs from the other chapters, focusing on disability studies “as an academic area of inquiry, not a service field” (p. 95). Taylor describes the evolution of the ways in which the experiences of students with disabilities have been studied and understood. Whereas the traditional medical model examines disability as a condition that needs to be cured, the social model that emerged later frames disability from a social, cultural, and political perspective. This shift in philosophy is consistent with AHEAD’s stated vision, mission, and values, which not only regard disability as the interaction between environment and person but also encourage campus environments to value disability. This perspective about disability is growing. Today, Taylor notes, nearly 30 disability studies programs in postsecondary institutions exist across the United States.

Disability Services and Campus Dynamics (2011) presents relevant, essential, and timely knowledge that will surely inform the practices of disability service administrators. More importantly, given the changing campus dynamics and growing population of students with disabilities, the book’s authors accomplish the task of providing useful knowledge and strategies to postsecondary administrators, student affairs professionals, and faculty members who seek information about legal compliance and wish to learn more about strategies to strengthen a campus climate of inclusion. A particular strength of the book is that the contributing authors offer forethought in terms of anticipating emerging concerns and issues that will impact postsecondary institutions across campus departments and units.

The authors of each chapter, however, explored some of the same topics multiple times across chapters. For instance, descriptions about emerging populations and the importance of technology were presented and revisited across chapters such that the information became superfluous. Should a revised edition of this book be considered in the future, I suggest that the editors proactively delegate particular topics to specific chapter authors more concretely and urge that contributing authors communicate with each other to avoid writing about overlapping topic areas. Still, while contributing authors repeated discussions about similar themes in this book (perhaps unknowingly), the book remains a timely and important resource in this era of significant change and inclusion for students with disabilities.

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Journal of Postsecondary Education and Disability

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Content

Manuscripts should demonstrate scholarly excellence in at least one of the following categories:

- Research: Reports original quantitative, qualitative, or mixed-method research
- Integration: Integrates research of others in a meaningful way; compares or contrasts theories; critiques results; and/or provides context for future exploration.
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All manuscripts must be prepared according to APA format as described in *The Publication Manual* (6th ed.), American Psychological Association, 2010. For responses to frequently asked questions about APA style, consult the APA web site at <http://www.apastyle.org/faqs.html>

- Manuscript length typically ranges between 25 and 35 pages including figures, tables, and references. Exceptions may be made depending upon topic and content.
- Include 3-5 keywords.
- Write sentences using active voice.
- Authors should use terminology that emphasizes the individual first and the disability second (see pages 71-76 of the APA Manual). Authors should also avoid the use of sexist language and the generic masculine pronoun.
- Manuscripts should have a title page that provides the names and affiliations of all authors and the address of the principal author.
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- Provide a cover letter asking that the manuscript be reviewed for publication consideration and that it has not been published or is being reviewed for publication elsewhere.
- Tables and figures must conform to APA standards, and must be in black and white only. All tables and figures should be vertical and fit on the page, no landscape format.

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For manuscripts that are accepted for publication, the following items must be provided to the Executive Editor:

- An electronic copy of the final manuscript as an email attachment.
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