

ENROLLING THE STUDENT WITH DISABILITIES: A CONTENT ANALYSIS OF PENNSYLVANIA HIGHER EDUCATION WEBSITES

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ABSTRACT

This paper presents the results of a study done as part of the MS program in nonprofit management at Robert Morris University. Focusing on access for prospective students with disabilities, we examined 105 Pennsylvania higher education websites for content pertaining to disability supports policy and service delivery environments. Our results were consistent with other studies that found differences in scope and prevalence of supports; more frequent listings of less expensive supports as opposed to assistive technology, self-advocacy, and time management supports. For the majority of institutions, neither their mission statements, nor their campus maps included references to students with disabilities' needs. Only seven institutions' disability services web pages included images of students with disabilities.

INTRODUCTION

This descriptive content analysis examines communication content in Pennsylvania higher education websites, pertaining to disability supports policy and service delivery environments. Increasingly, higher education websites are a significant communication medium for the education planning of prospective students with disabilities, as they are for prospective students overall. One higher education consultant in marketing and public relations, asserts that college choice is "driven by the Web", with more than one out of three Internet users crediting on-line information for their choice of a postsecondary institution (Cox-Otto, 2004).

Students with disabilities are entering higher education in unprecedented numbers as a result of their rights and entitlements having been secured by the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and more recently, the 1997 and 2004 amendments to the Individuals with Disabilities Education Improvement Act, commonly referred to as IDEA (Fleischer and Zames, 2001; Denbo, 2003, Sharpe and Johnson, 2001). Between 1978 and 2005, the number of first-time, full-time students with disabilities entering postsecondary education rose from three percent of the entering student population to 17% (Stodden, Whelley, Chang, and Harding, 2001; Christ and Stodden, 2005). As prospective students with disabilities aspire to meet admissions requirements, higher education websites are an important information source in this process.

The students with disabilities who are transitioning into higher education in 2008 came of age in the post 1960s Civil Rights era. They exhibit an entitlement sensibility that is clearly evident in increasing numbers of self-disclosures and accommodations requests seen in the postsecondary setting. For example, the percentage of college freshmen who reported having a disability increased from three to nine percent during a twenty year period from 1978-1998 (Stodden, Roberts, Pickelsimer, Jackson, and Chang, 2006). The increases in disclosures and requests for services, supports and accommodations have been accompanied by a corresponding rise in the range and complexity of disabilities, adding further clamor to a profession that aspires to "best practices" and "codification" of disability support services philosophy (Shaw & Dukes, 2005).

As students with disabilities enter postsecondary education, they are required to present their disability credentials anew. The combination of determining their eligibility (whether or not their disability qualifies for support) and their subsequent level of support (what is a reasonable response as dictated by ADA and Section 504 parameters) comprise the essence of the changed entitlement to civil rights climate (Stodden et al., 2006; Stodden, Whelley, Chang, and Harding, 2001; Janiga and Costenbader, 2002; Madaus and Shaw, 2006; Sharpe and Johnson, 2001).

Thus, prospective students with disabilities encounter the postsecondary education institution as applicants and self-advocates. The degree to which they have accomplished their personal, social, and academic objectives will determine their success as applicants. In turn, the extent to which they have mastered self-advocacy will influence their transition and academic outcomes, once they enroll in a higher education institution (Janiga and Costenbader, 2002; Stodden, Whelley, Chang, and Harding, 2001; Sharpe and Johnson, 2001; Shaw and Dukes, 2005; Madaus and Shaw, 2006).

Though numbers of students with disabilities in higher education are increasing, other trends suggest that their recruitment merits ongoing higher education admissions priority. Students with disabilities evidence almost a ten percent lag in enrollment in higher education, compared to students without disabilities, complicated by less successful outcomes (Tagayuna, Stodden, Chang, Zeleznic, and Whelley, 2005).

Establishing a baseline for higher education admissions' departments is important to enabling both the prospective student with disabilities and the institution of higher education to help eliminate the disparate results noted above. With the internet an increasingly utilized college search resource, website analysis permits improved understanding of how disability supports are presented.

LITERATURE REVIEW

Research in this area falls into two central categories. The first relates to the disability policy environment, as a creature of legislation associated with the higher education institution. How has research informed our understanding of the higher education policy environment with respect to disability supports? Topics include program standards, systemic models, and performance indicators. The second category includes research on the nature and scope of disability supports. Topics include assistive technology, self-advocacy, accommodations, and the need for shared professional vocabulary.

The Disability Services Policy Environment

Legislation

As students with disabilities enter postsecondary education, they move from the protection of IDEA entitlement legislation that underlay their Individualized Education Program (IEP), to a civil rights framework, anchored by the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 (Madaus and Shaw, 2006; Janiga and Costenbader, 2002). This civil rights orientation requires that postsecondary institutions provide "reasonable accommodations" only if they are requested (Tagayuna et al., 2005).

Madaus and Shaw (2006) note that for the disability services professional, the paradigm shift outlined above will impact key areas of their responsibility involving a student's eligibility to receive accommodations (e.g. re-evaluation, transition documents, and transition planning). There exists the potential for inequity and conflict – increasing numbers of students with disabilities, increasing numbers and types of accommodations requested, shrinking budgets, lack of empirical data to evaluate postsecondary disability supports, and lack of consensus about disability support services "best practices"

(Tagayuna et al., 2005; Shaw and Dukes, 2005; Christ and Stodden, 2005; Stodden, Whelley, Chang and Harding, 2001).

Hurtubis-Sahlen and Lehmann (2006) afford a telescoping view of this environment from the individual student's perspective: 1) the legal responsibility of the postsecondary institution (as framed by federal, public and private entities); 2) the legal responsibility of the student with disabilities (as framed by their assessment documentation or responsibility to ask questions and clarify understandings); 3) the context of the postsecondary institution (i.e. – are policies clearly stated and has good faith effort been made?); 4) the context of the student with disabilities' request (as informed by what has or has not worked in the past); and, 5) the course request context (does the accommodation requested “mesh” with the course content?).

Levels of Service Delivery

Scott (1996) cites Brinckerhoff, Shaw and McGuire's early model for examining a higher education institution's disability supports policy and services environment. In that model, the researchers designated four levels of disability services delivery: 1) *Decentralized and limited*, 2) *Loosely coordinated*, 3) *Centrally coordinated*, and 4) *Comprehensive*. Each level represents a varying mix of the following elements: a) contact person; b) accommodations provided; c) policies; and d) other support.

At one end of the continuum, a *decentralized and limited* higher education institution will lack a formal contact person, offer limited accommodations, be without any formal policy statement regarding disability services, and rely on the kindnesses of “sympathetic” faculty. The higher education institution with “comprehensive services” occupies the other end of the continuum and will feature multiple staff with expertise in disability supports accommodations, an institutional track record with, and budget allowances for, accommodations of many varieties.

The *comprehensive* institution will have a fully articulated policy statement, and other supports that enrich students with disabilities' quality of life and success with their academic goals on campus. In between, the other two categories are gradated by the level of formalization with which the disability support staff, policies and expanded supports are envisioned and implemented. For Scott (1996) the dividing line between a reactive and proactive approach to disability supports occurs when moving along the continuum, from *Loosely Coordinated* (Level 2) to *Centrally Coordinated* (Level 3), and *Comprehensive* (Level 4) services. As discussed below, a proactive environment is one that tends toward “best practices” and students' self-determination of services, as opposed to a reactive environment, that responds to legislation (Shaw and Dukes, 2005).

Program Standards and Performance Indicators

Prompted in part by evolving legislative and institutional policy climates, disability service professionals have recognized the need for general professional benchmarks or principles to guide their practices. In the 1990s, efforts were underway to develop professional standards and outcomes for the disability supports profession to address a knowledge gap regarding best practices in the disability services field (Shaw and Dukes, 2001). In 2004, a survey of 1,353 postsecondary disability service providers revealed that more than 80% of respondents felt they needed more guidance on professional best practices from their field (Harbour, 2004).

By 2005, Shaw and Dukes combined a comprehensive review of the disability support services literature with a multi-phased Delphi study, in which they presented 31 service components and 129 performance indicators to disability support services professionals for peer review. The resulting program standards and performance indicators span the higher education institutional setting, from policy development to the

disability supports practitioner. These standards were adopted by the Association on Higher Education and Disability (AHEAD) as professional benchmarks to facilitate evaluations of outcomes, service delivery, student satisfaction and areas of need, along with identifying resources and follow-up data.

Systemic Disability Services Models

DO-IT, which is a program based at the University of Washington has as its mission, to improve successful outcomes for persons with disabilities in postsecondary education and employment. DO-IT publishes numerous resources for distribution to higher education disability supports professionals. One such publication for admissions officers suggests the following as baseline accessibility and disability services topics: Legal Issues; Universal Design; Information Resources; Computers, Software and Assistive Technology; Recruitment, Events and Campus Tours; Applications and Disclosure; Evaluation of Applications and Appeals; Informing Applicants and New Students about Accommodation Resources; Special Admission/Review Programs; Orientation; Readmission Requests or Applications; Checklist Updates, and Additional Resources (<http://www.washington.edu/doiit/>).

Among their most recent publications, a manual titled “Building Capacity for a Welcoming and Accessible Postsecondary Institution” (2007) examines systemic change in higher education institutions. Their approach entails a comprehensive blueprint for promoting systemic change processes through *Communities of Practice (CoPs)* and *Capacity Building Institutes (CBIs)*. Systemic change may be internal and/or external in origin and occur at the institutional and individual levels (p. 1). Perhaps most important, disability supports require a holistic approach, one that receives support from the level of the President/Provost and involvement at all levels and across many divisions of campus life (DO-IT, 2007).

However, often campus disability supports are impeded by an absence of empirically based professional standards. Disability supports service delivery occurs amidst inadequate budgets and staffing (Tagayuna et al., 2005). This situation has also manifested in the absence of services even when needs have been demonstrated. The preceding study cited found that only 25% of students with disabilities who self-identified and requested disability related services actually received them. Within that same study sample, 22% reported they did not receive any services (p. 14).

DO-IT suggests that “buy-in” at the highest levels of campus administration is more likely to result in favorable outcomes in a number of areas: disability services budget levels; instructional / assistive technology planning processes; collaboration among administration, staff, academic, and related campus units; commitment to universal design (instruction, physical accessibility, curriculum, instruction); and encouragement of input from student’s with disabilities (2007).

For the disability supports professional, the challenge (and benefit) of recognizing the hallmarks of a shared professional framework is enhanced understanding of the vocabulary, performance standards and institutional action plans that will move higher education institutions from reactive to proactive stances in their disability policy / supports planning and service delivery (Scott, 1996; Shaw and Dukes, 2005; DO-IT, 2007).

Nature and Scope of Disability Supports

Assistive Technology Indicators

A bellwether for students with disabilities is a higher education institution’s budget and planning for assistive technology equipment and services. Assistive technology is defined in the Assistive Technology

Act of 1998 as “any item, piece of equipment, or product system that is used to increase, maintain, or improve the functional capabilities of a person with a disability” (www.ericdigests.org/2003-1/assistive.htm). One study noted that an assistive technology evaluation is the logical starting point for any student with a disability who has utilized or may now require assistive technology supports (Stodden et al., 2006). Most higher education institutions do not offer this evaluation on a routine basis, and would be within their legal rights to refuse to accept documentation from a prospective student if their assessment portfolio were deemed “outdated” (Madaus and Shaw, 2006).

Stodden, Whelley, Chang and Harding (2001) noted that access to assistive technology devices and services play a pivotal role toward students with disabilities’ academic success. Yet, they say numerous studies convey a sense that assistive and instructional technologies occupy tenuous ground in the programs and services of higher education institutions.

A survey of 977 postsecondary institutions revealed that fewer than 50% had a policy or an institutional level approach to evaluating technology planning and acquisition. Of those with policies in place, only half of them involved students with disabilities and/or the campus disability services professionals in making technology decisions (Michaels, Pollock-Prezant, Morabito, and Jackson, 2002). Comparisons between the importance and achievement of effective assistive technology planning and service delivery were associated with the following factors: 1) Overall assistive technology awareness by disability support professionals, 2) Overall assistive technology awareness by faculty, 3) Availability of assistive technology, and 4) Training in assistive technology.

With assistive technology a key area of concern for many students with disabilities, there is a leadership role for the higher education institution (especially one that engages in research on teaching and learning and/or technology) to help set the “assistive technology agenda” (Michaels, Pollock-Prezant, Morabito, and Jackson, 2002). Instructional technology will only be as accessible as departmental budgets, faculty awareness and training, and policy level commitments warrant. The increasing reliance upon instructional technology in higher education institutions raises responsibilities for the disability services office to be proactive in bringing accessibility issues to policy level discussions (Shaw and Dukes, 2005).

Self-Advocacy as Proactive

National focus groups conducted with students with disabilities identified self-advocacy skills-training and organization, time management skills and coordination of supports as deficit areas in disability services offerings (Tagayuna et al., 2005; Stodden, Whelley, Chang and Harding, 2001). Others have employed metaphors, such as survival training or bridge building, to underscore the importance of collaboration between secondary and postsecondary institutions to ensure transition readiness (Michaels, Pollock-Prezant, Morabito and Jackson, 2002; Janiga and Costenbader, 2002).

While advocacy is the role most often associated with disability services professionals, even the tenor of this role is under professional review. Shaw and Dukes (2005) have placed a shift in disability services philosophy at the forefront of their recommendations. Their *Standard One Performance Indicator* establishes the preferred role for the disability services office as an advocate for issues, not individual students. Similarly, they emphasize self-determination as an objective in three of their eight total standards. Stodden, Whelley, Chang, and Harding (2001) noted that the lack of self-advocacy training programs in the postsecondary setting bespoke a professional mindset that is best remedied by “teaching students to advocate for themselves” (2001).

To be clear, the solution is not merely one of offering more services but to better understand the effectiveness of services delivered. Sharpe and Johnson (2001) observed that further research is needed

on the linkage between higher education institutional capacity and short and long term outcomes (p. 170). As students with disabilities increasingly come to rely on higher education websites for information about prospective schools, consistency in communication content about disability support services is a key factor toward producing a good match between student and institution.

The National Center for the Study of Postsecondary Educational Supports (NCSPEs) is a consortium of four universities that supports a national workgroup of researchers. NCSPEs research conducted in 1999 and 2001 represented a first-time effort to analyze higher education disability support services, and has provided baseline data for subsequent research.

Five studies noted in our research (Stodden, Whelley, Chang and Harding, 2001; Sharpe and Johnson, 2001; Tagayuna et al., 2005; Christ and Stodden, 2005; and, Stodden et al. in 2006) analyzed the 1999 and 2001 NCSPEs data which identified testing accommodations, note takers, personal counseling, and advocacy assistance as among educational supports most commonly offered. Advocacy was reported among NCSPEs respondents as “commonly offered”, yet a separate national focus group project found that students with disabilities consider the type and timing of advocacy assistance in postsecondary education as “problematic” (Stodden, Whelley, Chang and Harding, 2001).

Similarly, NCSPEs respondents reported contrasting responses related to disability supports in the areas of study, memory, communication, organization and time management skills, and meta-cognitive strategies. While NCSPEs respondents considered these supports to be offered “more than 75% of the time”, the national focus group project characterized organization, time management, and coordination of supports as lacking in higher education (Stodden, Whelley, Chang and Harding, 2001).

Career related supports were commonly reported, but the researchers found little comfort in the disparate employment participation among students with disabilities and their non disabled peers upon graduation, citing 56% and 90% rates respectively. A key consideration in students with disabilities post graduation employment success is the higher education institution’s role in facilitating the transfer of supports to the employment setting. In the NCSPEs data reported in 1999, only 13% of disability support services coordinators reported such capabilities (Stodden, Whelley, Chang and Harding, 2001).

Service Delivery Capacity

Sharpe and Johnson (2001) analyzed the 1999 NCSPEs data using 20/20 analysis. This statistical analysis approach enables the researcher to separate the “high 20% from the low 20% of a distribution” (p. 170). They found that approximately equal numbers of institutions fell along the two ends of the distribution which they designated by the constructs *high capacity* or *low capacity*, determined by the frequency of occurrence of service provision. The *high capacity* group numbered 126, while those that offered supports on a less frequent basis, classified as *low capacity*, numbered 133. What was notable in their research was the representation of public versus private institutions in each category. Of the *high capacity* group, 84% were public institutions, compared to 16% private. In the *low capacity* group, the numbers were evenly split between public and private, or approximately 50% representation by each kind of institution.

Tagayuna et al., (2005) compared the 1999 and 2001 data collected by the NCSPEs. They reported a “national increase in the provision of postsecondary educational services, supports, and accommodation services from 1999 to 2001”. While the increase was indicative of “heightened awareness and advocacy”, the researchers noted other trends that were less heartening. Similar to the 1999 findings, the top four services most likely to be offered in postsecondary education are: testing accommodation services, note takers, personal counseling, and advocacy assistance (as distinct from self-advocacy skills training). These supports amount to a “minimalist approach”, readily offered by higher education

institutions because they are less costly and less complicated to deliver. Further, students with disabilities who require more costly or complex supports or accommodations may fare less well in this kind of educational setting. Other areas of concern were the decline in summer orientation programs, greater need for inter-institutional and community cooperation, and teacher and staff training. Areas of most improvement were “common generic supports, educational and instructional accommodations, and assistive technology” (p. 20).

Defining Baseline Disability Services

Christ and Stodden (2005) applied exploratory factor analysis to the NCSPEs data (1999 and 2001), in order to determine if the supports reported by disability support coordinators in the two studies “grouped together into meaningful constructs” (p. 25). Key among their findings was the clarification that a majority of the 34 NCSPEs survey items did group in a statistically reliable way into four constructs: 1) *Strategies*, 2) *Assistive Technology*, 3) *Accommodations*, and 4) *Vocation / Work*.

Employing the above constructs to investigate patterns among two and four year institutions during the years 1999-2001, researchers found a difference between the type of institution and the availability and level of supports offered. For example, assistive technology was available more often at two-year institutions and the provision of such supports increased during 1999-2001 (Christ and Stodden, 2005).

Stodden et al. (2006) also conducted an analysis of the NCSPEs data. Their findings noted the primacy of two-year schools and large, urban, public higher education institutions with respect to the provision of assistive technology supports to students with disabilities. Institutional members of AHEAD also performed well in these rankings. The lowest rankings were exhibited by private, smaller, rural postsecondary institutions. They observed that along with the trend toward increased enrollment by students with disabilities in higher education, there is a need to “build a knowledge base” that can aid higher education institutions in serving multiple needs, namely increased demands for assistive technology and distance learning.

RESEARCH QUESTIONS

Where do Pennsylvania’s institutions of higher education fall in the continuum of disability supports policy and services environment? To look at that issue, we posed two research questions to help guide a descriptive website content analysis:

1. What patterns in Pennsylvania higher education websites’ communication content of disability services are seen at the census level?
2. What patterns in Pennsylvania higher education websites’ communication content of disability services are seen by type of institution (two and four year public and two and four year private institutions)?

METHODOLOGY

Although Neuendorf (2002) cautions that most content analyses do not test formal research questions, we did rely on descriptive content analysis to examine the two research questions. Content analysis may use either theory or past research for variable collection (p.102). This study relied on prior research to construct the variables used in the analysis of Pennsylvania higher education websites. Questions had to be developed for the analysis to proceed. Question design is an iterative process, an aspect that is magnified in the case of website content analysis (Neuendorf, 2002; Cox-Otto, 2004).

The internet is a communication medium in which navigation uses organizational, functional or visual metaphors (Cox-Otto, 2004). The design involved developing research-based questions to analyze related communication content in higher education websites, while allowing for inherent variation in the internet as a communication medium. The initial, working document became refined through an iterative process, in which web pages and/or topical areas were selected for their relevance as prospective disability policy / supports environment indicators. During the iterative process, the question format moved from a linear (organizational) premise to a nonlinear one (topical).

Instrument

The design process began with a research basis for identifying the themes, higher education organizational areas, and website content areas most relevant to this descriptive content analysis. Neuendorf (2002) terms this correspondence of units of analysis as “third-order” linkage: “A third-order linkage is simply a logical link, using evidence from source or receiver studies to provide a rationale for a content analysis or using a content analysis as motivation for source or receiver studies” (p. 62).

The web site review covered the following ten areas:

- 1) Website Accessibility,
- 2) Images of Campus Life,
- 3) Institutional Identity Statements,
- 4) Universal Design and Accessibility of Learning,
- 5) Accessibility of Campus,
- 6) Resources for Incoming Students,
- 7) Accommodations Disclosure,
- 8) Disability Services Contact Information,
- 9) Disability Accommodations Procedure, and
- 10) Disability Supports.

Sample

The descriptive content analysis included a census of 105 Pennsylvania higher education websites selected by the following criteria:

- 1) Type of institution: two or four year public or private college or university,
- 2) Location: All counties in Pennsylvania were eligible locations,
- 3) Only main campus eligible in cases of multiple sites, and
- 4) Broad academic offerings.

All content analyses were conducted using the same Dell Inspiron E1505 equipment and software. The analyses were begun on January 27, 2008 and concluded on March 16, 2008. Each content analysis took approximately 20-30 minutes.

The delineation of the study census for this descriptive content analysis as Pennsylvania higher education institutions’ websites, is consistent with legislative and research parameters. IDEA (2004) amendments provide that standards for a “Summary of Performance” (SOP) to mark transitions from secondary to postsecondary education and into adult life will be promulgated at the state level (Madaus and Shaw, 2006). In addition, the Pennsylvania Department of Education and NCSPES categories for higher education institutions are compatible (e.g. two and four year public institutions and two and four year private institutions).

Variables

We used 48 variables. Five of which were nominal and 43 of which were ordinal. The ordinal levels were based on the CONTINUUM MODEL in Scott (1996) and Shaw and Dukes' (2005) PROGRAM STANDARDS AND PERFORMANCE INDICATORS which flesh out the disability services components that signal transition from a reactive environment to a proactive one. Other conceptual frameworks built on these. As discussed in the literature review, the CONTINUUM MODEL specifies four levels of disability services delivery in a higher education setting, with a comprehensive level of service delivery most closely akin to a proactive disability policy environment. The nominal variables were: Case ID, Date, Coder ID, County ID, and type of higher education institution.

Data Analysis

To analyze the data, we used descriptive statistics, frequencies and cross tabulations. Descriptive statistical analysis of frequencies was used to present the primary demographic characteristics of the census. This data included the total number, county location, and type of higher education institution. Descriptive statistical analysis of frequencies was also used to analyze the following variables: diversity images; diversity definitions; physical campus accessibility; orientation; accommodations disclosure, and disability services contact information. Descriptive statistical analysis of cross tabulation was used to analyze the co-occurrence of key variables in comparison to NCSPEs 1999 and 2001 findings. This data included types of higher education institutions grouped by variables identified in NCSPEs studies as disability services delivery environment indicators: orientation, assistive technology, self-advocacy, pattern of disability supports.

The content analysis included 105 higher education institutions, of which 34 were public (18 four year and 16 two year institutions) and 71 were private (69 four year and 2 two year institutions). Of 47 Pennsylvania counties eligible for inclusion, there were 39 counties from which higher education institutions met the criteria discussed above. Four of these counties, Allegheny, Delaware, Montgomery, and Philadelphia, accounted for 35 higher education institutions (33%) from the census. The next 21 higher education institutions (20%) were grouped in the counties of Berks, Cumberland, Lackawanna, Lehigh, and Luzerne. Higher education institutions were not included in this content analysis from the following 8 Pennsylvania counties (17%): Armstrong, Blair, Clearfield, Fayette, Jefferson, McKean, Shuylkill, and Venango.

To measure the variable, *Website Accessibility*, we used Etre's Accessibility Check, an internet-based technical website tool, to assess web pages for WAI Priority 1, 2 and 3 errors. Each error category was assigned a level of response needed. Priority 1 issues were assigned the most urgent level of attention, and were given the status of "must be fixed" to provide the most basic level of accessibility.

RESULTS

Research Question 1

Research Question 1 examined the patterns noted in the higher education websites in the context of the themes and trends noted in the research on disability services. Of the 105 higher education websites analyzed for this study, there were 21 institutions (20%) for which the disability services page could not be located. This finding is highly significant, given Shaw and Dukes (2005) emphasis on the need for a shared professional vocabulary, standards and best practices. One of their key purposes for developing the performance indicators was to provide students with disabilities and their families with a "baseline regarding what to expect from postsecondary disability services" (p. 12). Clearly this objective is impeded when, as in this case, 20% of the census disability services web pages could not be located,

though efforts included search engines, site indexes, and recognized terminology such as: “disability services”, “disability accommodations”, “accommodations”, “ADA”, “students with disabilities”, and “special needs”. The patterns observed are set forth below by content area:

Website Accessibility: Priority 1 errors measured zero for 88% of the public higher education websites and 80% of the private, on the Home Page. Zero errors were found on 63% of the private and 88% of the public at the disability services page level.

Images of Campus Life: There were inclusive images of students with disabilities found on the disability services page on five public higher education websites, while 19 of the institutions in this group did not feature any images at all on this web page level. Of the private higher education institutions, 33 websites did not include any images on the disability services web pages. These findings suggest a significant “missed opportunity” for higher education institutions to make their websites inclusive with minimal effort, that is, by including students with disabilities on the web pages students are likely to utilize frequently during their enrollment.

Diversity: Of the 105 higher education websites analyzed, two had mission statements that included students with disabilities in the definition of diversity. There were 39 higher education websites in which the mission statement discussed diversity but did not provide any details or definitions. These findings are consistent with earlier studies. Additionally, where higher education institutions can signal an institutional commitment to diversity, how diversity is defined will have a direct bearing on whether students with disabilities are beneficiaries of that institutional climate (DO-IT, 2007).

Universal Design & Accessibility of Learning: Overall, 56% of the higher education websites included boilerplate language defining information literacy as an institutional goal, within the purview of campus library services. Yet, only ten percent or eleven of the higher education websites included information about assistive technology supports on or linked to their library web pages. This finding is highly relevant to the research of Michaels, Pollock-Prezant, Morabito and Jackson (2002) which included campus library accessibility and technology infrastructure among their indicators of disability services offices involvement with technology issues and concerns (p. 11). They provided further insight into this area in their findings related to disparities between the importance assigned to knowledge about information literacy and information technology issues as related to students with disabilities, and actual capabilities as manifested in faculty and staff.

Their finding is mirrored in this study’s analysis of *faculty* resources for assistive technology and instructing students with disabilities as part of library services. Of 105 higher education institutions in the study, only four (three public and one private) had links to faculty resources. There were 97 institutions (92%) among the census that did not include any information about this topic.

Accessibility of Campus: There were 61 higher education websites in which the campus map did not provide accessibility information of any type. There were 29 higher education websites in which either “Level 1” or “Level 2” responses were noted, including information about routes, building access, and parking for students with disabilities. These findings were divided among 13 public and 16 private higher education institutions. The preponderance of institutions that did not include any accessibility information on their campus maps also fails to meet the priority given this area by Shaw & Dukes (2005) and DO-IT (2007).

Resources for Incoming Students: At the disability services web page level, there were six public and five private higher education institutions that provided information or links regarding orientation for incoming students. Tagayuna et al., (2005) noted that summer orientation programs were the least likely support service to be offered to students with disabilities (p. 20).

Accommodations Disclosure: None of the higher education institutions' undergraduate admissions web pages included information about students with disabilities' duty to self-disclose in order to determine eligibility for services.

There were links visible from the undergraduate admissions web page to the disability services web pages in 13% of the websites analyzed. These were found most often public higher education institutions (24%), whereas, private higher education institutions only included these links in .08% of the websites visited. The absence of notification about initiating the eligibility process, as a characteristic of the postsecondary transition, is well documented in the research (Madaus and Shaw, 2006; Janiga and Costenbader, 2002). Notably, students with disabilities were provided encouragement to self-disclose their disability (a Level "1" response) on 74% of the public higher education websites and 56% of the private websites. The disparity between public and private institutions, with public institutions' showing a proactive notification stance more frequently, is also consistent with earlier research (Sharpe and Johnson, 2001).

Disability Services Contact Information: Of the 105 higher education websites analyzed, we found 45 which included a disability services staff with exclusive responsibilities in that area. Of the 45, 68% were on public higher education websites; 31% were found on private higher education websites. The number of disability supports staff with professional specialization found in public institutions has been linked to higher staff-to-student ratios and other indicators of institutions' capacity to deliver disability supports to a larger number and for a greater variety of disabilities (Sharpe and Johnson, 2001; Stodden, Whelley, Chang and Harding, 2001).

Disability Accommodations Procedure: Our study found that the disability services process was presented in detail at the disability services web page level on 88% of the 34 public and 51% of the 71 private higher education institutions analyzed. This kind of information supports a welcoming and accessible campus sensibility. Sharpe and Johnson, in their 2001 study of high and low capacity institutions, noted the connection between staffing and disability categories served as signal characteristics of an institution's capability. In their findings, public institutions overwhelmingly dominated the high capacity category. Assistive technology supports were listed, discussed, or described on 71% of the public higher education disability services web pages, compared to 27% of the private institutions.

Disability Supports: In our study, self-advocacy was emphasized in 32% of the public higher education institutions at the disability services web page level, and in 21% of the private institutions. Shaw and Dukes (2005) place self-advocacy awareness and proficiency at the forefront of their "Performance Indicators" as opposed to the tendency of disability services professionals to advocate for students with disabilities, rather than teaching self-advocacy skills.

Sharpe and Johnson (2001) also noted that a wider range of supports will generally be found at public institutions. Overall, the level of supports was consistently higher among the public institutions, for each and every kind of support. The most commonly reported supports and accommodations were "testing accommodations, advocacy services, notetakers and readers, personal counseling services, tutors, interpreters and transliterators" (p. 173). These supports are among the most often reported because they tend to be available to all students, whether or not they have a disability (Christ and Stodden, 2005). Though these categories were the highest for both public and private institutions, Sharpe and Johnson found differences in their "magnitude" of availability at public versus private institutions. These differences are also evident our study. The two highest categories are *Learning/Study* and *Scheduling/Testing/Notes*. The highest percentages are reported by the public institutions, at 56% and 82% respectively, whereas private institutions' websites included communication content 38% and 45% of the time. Alternatively, organization and time management skills were offered less often in both public

and private institutions, confirming national research findings that this area is often deficient in disability services programs (Stodden, Whelley, Chang and Harding, 2001).

Research Question 2

Research Question 2 examined the census patterns found in the NSCPES data and discussed the Stodden, et al. (2006), Tagayuna, et al. (2005), Sharpe and Johnson (2001), and Christ and Stodden, (2005) studies involving disability supports in higher education. These were used as benchmark data for our content analysis of two-year, four-year, public and private Pennsylvania higher education institutions' websites. Our results were consistent with the patterns found by others when examining the NSCPES data. That is, the level of disability supports and the services environment for students with disabilities was more evident on web sites of public institutions of higher education in Pennsylvania than on corresponding web sites of private institutions of higher education in Pennsylvania on higher education. Assistive technology was more available at two year institutions than at four year institutions. The table below summarizes these findings

Table I: Research Question 2

National Center for the Study of Postsecondary Educational Supports (NCSPES) Summary of Research Findings by Type of Institution 1999-2001
<u>Large, public 4-year higher education institutions</u>
<ul style="list-style-type: none"> ▪ The area of least offering was that of AT Evaluations (Stodden et. al., 2006) ▪ Summer orientation programs least likely to be offered (Tagayuna et. al., 2005) ▪ Assistive technology offerings higher at 4-year public institutions (Stodden et. al., 2006) ▪ Public institutions disproportionately <i>high capacity</i> category (Sharpe & Johnson, 2001) ▪ Wider range of supports available at large, public institutions (Sharpe & Johnson, 2001)
<u>Small, private 4-year higher education institutions</u>
<ul style="list-style-type: none"> ▪ The area of least offering was that of AT Evaluations (Stodden et. al., 2006) ▪ Summer orientation programs least likely to be offered (Tagayuna et. al., 2005) ▪ Accommodations and supports more often limited in nature (Sharpe & Johnson, 2001)
<u>Two-year community colleges</u>
<ul style="list-style-type: none"> ▪ Summer orientation programs least likely to be offered (Tagayuna et. al., 2005) ▪ The area of least offering was that of AT Evaluations (Stodden et. al., 2006) ▪ Public institutions disproportionately <i>high capacity</i> category (Sharpe & Johnson, 2001) ▪ Greater number and range of assistive technology supports (Stodden et. al, 2006) ▪ Assistive technology supports higher than 4-year institutions (Christ & Stodden, 2005)

DISCUSSION AND CONCLUSION

This study examined parallels between the scholarly research and communication content of higher education websites with respect to disability services. The process of developing the questions was iterative, and allowed the opportunity to test various questions and content areas for their applicability to this content analysis. Many revisions occurred early in the process, as the format changed from an

organizational orientation to a topical one that allowed different website environments to be analyzed using a common instrument. As noted above, the absence of a shared vocabulary pertaining to the nomenclature used to identify disability services was reflected in this study's finding that 20% of the higher education institutions' disability services web pages could not be located for purposes of this descriptive content analysis.

Two content areas will require additional work in order to more effectively realize the potential of research linkage. The section, *Universal Design and Accessibility of Learning*, was intended in part to explore communication content that reflected collaborative partnerships among disability services, information technology, as well as library services and admissions divisions in campus communities. Research indicates that there will be a lack of policy level cooperation found in higher education institutions with respect to information technology, instructional technology, assistive technology and accessibility issues across these areas (Michaels, Pollock-Prezant, Morabito, and Jackson, 2002). The results in this area were certainly indicative of that, but the explanation might be related to question design. For example, Universal Design is a complex and elusive concept to measure via this method. Universal Design can be applied to instruction, services, information technology, and physical spaces. As the website analysis moved forward, the fluidity of this definition proved problematic in terms of developing a reliable and consistent set of Universal Design indicators.

The content area, *Resources for Incoming Students*, used undergraduate admissions and disability services web pages to examine communication content pertaining to orientation and peer supports for students with disabilities. Research cites a paucity of summer orientation programs for students with disabilities (Tagayuna et al., 2005). However, it was evident from this content analysis that many higher education institutions report their orientation programs as part of other web pages, such as "First Year Programs" or "Accepted Students". Therefore, clarification of this content area is needed to permit accurate analysis.

As the development process moved forward, it became apparent that additional work is needed to ensure intercoder reliability of the research instrument, to permit its wide-based use as a website content analysis research tool. Though preliminary spot checks were conducted on the data, a fuller assessment is needed once the instrument is further refined.

Future Research

As we have seen, growing numbers of students with disabilities are seeking access to higher education. Access for many begins with the institution's website. The extent to which students with disabilities are empowered to ask relevant questions and make informed choices will greatly affect their quality of life on campus, academic performance, and long term success. Additional research is needed to develop a research-based website assessment tool that identifies disability supports policy and service delivery environment indicators. The instrument developed for this website content analysis is a step toward the development of such a tool.

We hope the study proves to be relevant as a policy assessment tool for higher education administrators. For the prospective student with disabilities, a sharpened awareness can improve the quality of the campus visit and interview stages, and result in better alignment between the student with disabilities and the higher education institution. For the higher education disability supports practitioner, the baseline data that this study affords offers new avenues for dialogue and collaboration among disability services and other campus departments and divisions. For senior level policy-makers, the study's comparative data illuminates exemplars in website communication content, and offers potential for institutional self-assessment of website communication content, and perhaps even the disability services policy environment, ostensibly mirrored by the website communication content.

Further research is needed to determine if there is a basis for testing “dashboard indicators” that can be used to glean understanding of a higher education institution’s disability services policy environment. SPSS two-step cluster analysis holds promise for investigation of whether meaningful grouping exists among the variables used in this content analysis. Further refinement of the data is needed to separate outliers and to clarify proactive response levels and reactive ones before undertaking cluster analyses.

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