

# Postsecondary Disability Service Providers' Perceptions About Implementing Universal Design for Instruction (UDI)

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## Abstract

*Sixteen disability service providers from 2-year and 4-year public and private postsecondary institutions were divided into 2 focus groups, each with 8 participants. When asked to share their perspectives on the implementation of Universal Design for Instruction (UDI) on their campus, service providers described strengths and weaknesses of UDI, potential changes to their current roles and responsibilities, and support structures they would need to promote the adoption of UDI on their campuses. Participants' comments reflected detailed knowledge about successful change agency at the institutional level.*

Postsecondary disability service providers are directly involved in promoting equal access to educational opportunities for students with disabilities. To achieve this goal, service providers perform multiple roles including the administration of disability programs, the provision of accommodations and services to students, and consultation and collaboration with campus personnel such as faculty members and administrators (Shaw, McGuire, & Madaus, 1997). Due to these interactions with multiple members of the campus community, disability service providers occupy a unique ecological niche in the complex environment of postsecondary educational institutions. Consequently, they can offer important insights regarding innovative approaches to inclusive instructional practices in postsecondary education.

This study was designed to gather information about the perceptions of disability service providers regarding Universal Design for Instruction (UDI), as a faculty-based approach to enhanced access to learning

through the use of inclusive teaching practices (Scott, McGuire, & Foley, 2003). UDI offers an innovative way of thinking about inclusion in the postsecondary educational environment. Traditional approaches to accommodation involve removing barriers embedded in instructional spaces or removing practices after a student with a disability formally identifies a need to do so. Conversely, UDI offers a set of flexible principles that instructors can use to anticipate diverse learning needs. UDI differs from traditional thinking about accommodating diversity in the college classroom because it “consists of the proactive design and use of inclusive instructional strategies that benefit a broad range of learners including students with disabilities” (Scott, McGuire, & Embry, 2002).

In this exploratory study two focus groups, each with eight participants, were conducted with a total of sixteen disability service providers. The goal of the study was to develop a better understanding of service providers' perceptions about factors associated with the

implementation of UDI on their particular campuses. A qualitative research method was chosen in order to study the beliefs of the sixteen participants. Qualitative research methods that produce in-depth data, including focus group interviews, assist in the exploration of perceptions, attitudes, and beliefs. Focus groups allow participants to contribute information in a group discussion, which produces richer and more comprehensive data than could be developed in an individual interview or through a quantitative method such as a survey (Brodigan, 1992).

### **Background of the study**

The growing diversity of the college student population has influenced thinking about the importance of teaching in higher education (Boyer, 1990; Lazerson, Wagener, & Shumanis, 2000). The college student population has become more diverse as students from traditionally underrepresented groups, including students with disabilities, have enrolled in increasing numbers. The largest growth category among college students with disabilities is comprised of students with cognitive disabilities, including LD (Henderson, 2001) and ADHD (Byron & Parker, 2002; Quinn & McCormick, 1998; Wolf, 2001). An increasingly diverse student population challenges faculty who embrace the scholarship of teaching to seek ways to broaden access to learning within their discipline. In a cross-disciplinary pollination of ideas, UDI is grounded in theory and experiential knowledge from an innovative and inclusive approach to providing access to the physical environment in the fields of architecture and product design.

#### *Universal Design: Designing for diversity in the physical environment*

The primary theoretical foundation of UDI is Universal Design (UD), a concept that includes seven principles that can expand physical access for people with a broad range of needs (The Center for Universal Design, 1997; see Appendix A). Architects and designers were challenged to solve design problems by removing barriers that prevented access by users with physical or sensory disabilities. Prior to the advent of UD, typical solutions involved adaptations that were “retrofitted” to an existing design or structure. A common example involved adding a ramp to an entrance previously accessible only by stairs.

The use of the word “universal” in the term “UD” refers to proactive design that maximizes the number of people who can use the product or environment. UD

anticipates diversity in the population that interacts with products and environments. Although UD was a response to the needs of individuals with physical disabilities, architects and designers realized that inclusive design features benefited many diverse users (The Center for Universal Design, 1997). An example is a curb cut in a sidewalk, which benefits a parent pushing a stroller, an employee with a hand truck, and a shopper using a wheelchair. Environments and products that are created by applying the Principles of UD © can be used by a broad range of people (Follette Story, Mueller, & Mace, 1998).

#### *UDI: Designing for diversity in the postsecondary instructional environment*

Access to postsecondary educational programs for qualified students with disabilities is often provided through individual adjustments to regular class procedures. Silver, Bourke and Strehorn (1998) introduced the idea of providing access to higher education for diverse learners through applying the concept of Universal Design (UD) to instruction, noting that some faculty already consider diverse learning needs when planning instruction. Application of the principles of UD to college instruction has been further explored through the research base and construct validation process for UDI, an emerging construct that is grounded in the literature on UD, effective instruction in higher education, and effective instruction in both secondary and postsecondary settings with students who have cognitive disabilities (Scott, McGuire, & Foley, 2003). A brief summary of the literature base and construct validation process for the emerging construct of UDI is included here to provide a context for the current study pertaining to the perceptions of disability service providers regarding UDI. A comprehensive description of the research base and construct validation process for UDI is available elsewhere (see Scott, McGuire, and Foley, 2003).

In an exploration of the comparison between accessible architectural design and accessible instruction, a review of the literature was conducted involving the areas of UD, effective instruction in higher education, and effective instruction in both secondary and postsecondary settings with students who have learning and other cognitive disabilities. The area of learning disabilities was included because the term represents a broad range of learning and cognitive disabilities with implications for learning and teaching. The method of review incorporated comprehensive searches of ERIC and PsychINFO data bases as well as the an-

cestral examination of reference lists. Faculty with national reputations of expertise in the following areas were consulted to identify additional resources or gaps in the search: instruction at the postsecondary and K-12 levels; learning disabilities; instruction of diverse learners including college students with learning disabilities; and provision of postsecondary disability services.

As a result of the extensive search process, select references emerged as seminal resources in each of the related topics. (See Scott, McGuire, & Foley, 2003 for a discussion of this process.) In the area of effective instruction in higher education, Chickering and Gamson's (1987) seven principles of good practice in undergraduate education is widely cited as an authoritative source. In the area of effective instruction for students with cognitive disabilities in secondary settings, a substantial volume of research was reviewed. Of particular significance to the development of UDI is the extensive research on instructional strategies conducted by Kameenui and Carnine and colleagues of the National Center to Improve the Tools of Educators (NCITE), leading to the development of six universal access principles for designing curriculum (Kameenui & Carnine, 1998). The work of The Center on Applied Special Technology (CAST) reflects a relatively long history focused on making the curriculum accessible to all students at the K-12 level (Orkwis & McLane, 1998). The work of CAST, with recent expansion to applications in the postsecondary environment, is structured by three essential qualities of Universal Design for Learning, (Center for Applied Special Technology, 2002).

These seminal sources related to effective and inclusive instruction and Universal Design were examined simultaneously. With the goal of building on the existing knowledge base of research in diverse disciplines, areas of overlap were identified, as well as areas where gaps existed. The diverse literature sources were found to be remarkably compatible. Universal Design was identified as a fundamental construct providing the theoretical foundation for the development of UDI. The work of Chickering and Gamson (1987), Kameenui and Carnine (1998) and CAST (2002) were each examined to inform and broaden the application of UD to instructional practices (see Appendix B). As a result of this process, nine principles of UDI © were delineated. Seven of the principles are intentionally designed to closely correspond with the original principles of UD, reflecting this theoretical grounding. Two additional principles, "A Community of Learners" and

"Instructional Climate," were incorporated to reflect design considerations that are unique to the literature on effective instruction (McGuire, Scott, & Shaw, 2003). Further review of the principles for content and wording was conducted by a range of experts and practitioners in higher education. When their feedback was incorporated, the principles underwent further review by the Center for Universal Design at North Carolina State University, for feedback on "goodness of fit" with the original seven principles of UD. The resulting Principles of UDI may be found in Appendix C.

As an emerging theoretical model, UDI is designed to promote inclusive instruction in postsecondary education. The extent to which it can be observed to do so will provide necessary construct validation (Gall, Borg, & Gall, 1996). The ongoing construct validation process has also incorporated research on the perceptions of postsecondary students with LD and university faculty members who have been honored for effective teaching (Madaus, Scott, & McGuire, 2002a, 2002b). The current study of service providers' perceptions about UDI will contribute to this critical review and growing validation process. The expertise of service providers in understanding disability in the postsecondary environment through their collaboration with students, faculty members, and administrators is relevant to understanding UDI and its implications for these constituent groups. In a survey of 214 disability service directors drawn from varied regions of the U.S. across a range of institutional types, respondents indicated their concern about the need for faculty training in responding to students with disabilities and their belief that administrative support would be important in carrying out the training (Salzberg, Peterson, Debrand, Blair, Carsey, & Johnson, 2002). These findings highlight the need to understand the potential barriers that service providers may encounter and the supports they may need in their campus-wide efforts to implement new practices such as UDI. Consequently, the research questions for the study were:

1. What are the perceptions of postsecondary disability service providers about the strengths and weaknesses of UDI as an approach to faculty development that will enhance inclusive teaching?
2. What are the perceptions of postsecondary disability service providers about their role in promoting UDI as a campus initiative?
3. What are the perceptions of postsecondary disability service providers about the supports that would be needed by Offices for Students with Disabilities (OSD) to implement UDI as a means of faculty development?

## Method

### *Participants*

Sixteen disability service providers participated. Two focus groups were formed, each involving eight participants. Demographic data were obtained from all participants. There were 3 males and 13 females. Their years of experience in the field of disability services ranged from 2.5 years to 31 years. Four participants worked in public 4-year institutions of higher education, 5 worked in private 4-year institutions, and 7 worked in public 2-year institutions. Fifteen of the campuses were in the U.S., and one was in Canada.

### *Procedure*

The focus group method of research was chosen because it allows researchers to collect data on participants' perceptions and beliefs about complex experiences and issues (Carey, 1994). Members of the UDI project team of researchers from the Center on Postsecondary Education and Disability at the University of Connecticut developed a protocol to elicit answers to the research questions (see Appendix D). As a starting point for generating discussion, protocol questions focused on participants' experiences with students with LD/ADHD. The open-ended question format allowed for wider discussion, however, of students with a wide range of disabilities. Establishing trust is an important element in the implementation of focus group research (Carey, 1994). This goal was addressed by the initial protocol question, which prompted participants to identify questions faculty members frequently ask about teaching students with LD and/or ADHD. Subsequent protocol items were designed to collect data about the research questions.

UDI project team members recruited participants from disability service providers who attended a major professional development institute held in New England in 2002. Interest in participating may have been enhanced by the conference's keynote presentation about UDI. All 16 participants attended the keynote presentation and thus were exposed to the construct of UDI before the focus group sessions began. The keynote presenters described the process of literature searches regarding postsecondary instruction as well as effective instructional strategies for students with LD at the postsecondary and secondary levels. They then elaborated on the process used to develop the "Nine Principles of UDI." The keynote address also suggested ways that instructors might use the Principles to design more inclusive instruction, the ongoing process of con-

struct validation, and the major activities of the Universal Design for Instruction Project.

In addition to eight participants, each of the focus groups included a UDI project team member who served as the facilitator. Participants gave permission for the focus group discussion to be audio taped. Two other project team members were present in order to keep written and audio taped records of the discussion, but they did not participate in the dialogue.

Audiotapes of the focus group sessions were transcribed for analysis, producing a rich data stream that is associated with a verifiable analysis (Krueger & Casey, 2000). Transcripts of the focus group sessions were analyzed and coded separately by two of the project team members who were present at both sessions. Results of their analysis were compared to identify coding decisions that were incongruent. Code definitions then were refined in a multi-step process until 100% congruence was reached. The process used in reaching coding decisions was documented in a research log as the data were analyzed. A codebook was developed containing the codes used for transcript analysis, the definition for each code, and all focus group comments that exemplified each code.

In order to enhance the reliability of the analysis of focus group data, the research team then applied a multistep interrater reliability process to the coding procedure. Analysis procedures that are systematic and sequential help ensure that the findings are an accurate reflection of what participants said in the group (Krueger & Casey, 2000). A third member of the UDI project team coded the transcript of one focus group session to identify any remaining ambiguities in the codebook. Based upon this process the codebook was further refined. The inter-rater reliability process was completed when the third member's coding of the remaining focus group session transcript resulted in an inter-rater reliability rate of 91%.

## Results

An overview of disability service providers' responses to focus group protocol questions follows with illustrative responses from participants included for each question.

### *Strengths and weaknesses of UDI*

*Strengths.* Service providers believed that UDI offered benefits congruent with existing goals and interests of their institutions, faculty, students, and the disability service provider's role. Several described UDI's

ability to assist the institution in attracting and retaining a diverse student body. One participant stated:

I like the idea of, especially with campuses that talk about cultural diversity, the way to approach UDI as a kind of cultural phenomenon, in that if you want to reach students in the classroom right now, all students are not the same. Especially now, there are growing differences everyday, so many cultures. And disability is one of those cultures.

Another participant described UDI as a useful approach for faculty at an institution experiencing increased enrollment of students from a non-Western culture, noting that, “guided notes, using Power Point, all of those things, not going off on tangents all of the time, are really something that *all* students could benefit from, not just our English-as-a-second-language (ESL) students or our students with various disabilities.” Several service providers described faculty members’ desires to provide effective instruction as a strong reason for adopting UDI. As one focus group member commented, “I think if professors were able to reach out to their entire class, they may get more satisfaction out of their teaching.” Another noted that faculty would be interested in UDI’s empirical foundation, adding that, “with the UDI coming in, it’s coming from faculty and they’re going to respect that a little more than they are from me.”

Service providers also identified students’ needs that could be met by UDI. Several discussed the normalizing effect of UDI. As one said, “I think the obvious [strength of UDI] is certainly the breakdown of the stigmas associated with the disabilities.” Another participant linked diverse instructional methods to diverse learning styles, adding, “students are unhappy with a one-model approach. Straight lecture is not cutting it and they become savvy consumers.” In addition to these benefits relevant to students, one participant associated the “intuitive” nature of UDI with her own approach to working with students in her role as a disability service provider.

*Weaknesses.* Participants described six categories of weaknesses related to UDI. Many of these perceived limitations centered upon the need to make changes to current knowledge, behaviors, or resources. Identified weaknesses included faculty resistance, training issues, technology, students, service providers’ lack of expertise, and the lack of a legal mandate. Several participants described faculty members’ reluctance to replace current, accepted practice with a new instructional approach that is still being grounded in empirical sup-

port. One service provider imagined the following exchange with professors: “What’s the evidence that you can show me that says this is going to work?” Right now, they don’t have that. Hopefully, in the future, they will.” Several service providers identified the difficulty in training non-tenure-track instructors, including adjunct faculty, part time instructors and graduate teaching assistants, due to the transient nature of these positions. One participant commented:

“We have a large number of adjunct faculty. We have twice as many adjunct faculty as we do regular faculty. It is very hard for me even to get testing back and forth sometimes. So they are not being paid to spend any extra time here. A lot of them have other jobs and getting them trained is a difficulty I see.”

In describing the issue of providing training for adjunct faculty, another participant stated, “There is no time in their involvement with the college to do any kind of training. They’re here, they teach, they leave.” One service provider identified the lack of classroom technology as another weakness, noting, “There are classrooms that have everything right there, but the university doesn’t have the money to have the laptop and the projector, so that takes away the PowerPoint presentation.” Two service providers commented that UDI could adversely affect students by limiting their need to develop self-advocacy skills and by exposing them to some instructors who embrace UDI and some who do not. As one participant from a community college stated:

“I know when I have students, I put them through an exercise, how to become proactive, how to talk about their learning style. And I don’t think that they would have as much of an opportunity to be as proactive in their own education at this point.”

One service provider identified lack of expertise in college teaching as another weakness. As she noted, “The other issue, too, is the whole issue of staff versus faculty politics of an institution. Me as the staff person, I don’t necessarily feel I could talk to a whole group of faculty about this.” Finally, several service providers identified the legal mandate to provide accommodations as an important source of decision-making authority. Conversely, they identified the lack of a legal mandate for UDI as a weakness when considering its implementation. As one service provider stated, “I think with dis-

ability, even though my main mantra is to educate faculty, I always have in my back pocket, "This is the law."

*Hypothetical situations.* Several participants described hypothetical situations, employing "if...then" grammatical constructions in their statements, to identify variables that could influence the adoption of UDI on their campuses. As one service provider, discussing the importance of engaging a faculty audience with an effective presentation about UDI, phrased it, "If you could get them [faculty] to buy in to it, they would realize that they're not teaching to a classroom of the same students. Whether they have a disability or not, they're individual learners." These hypothetical situation statements included the need to build collaborative relationships with faculty, presenting UDI in a convincing manner, addressing faculty's concerns about workload and class size, the role of campus type in determining the amount of time service providers had to help student develop self-advocacy skills, and the manner in which faculty create curriculum. Most comments in this category underscored the central importance of a collaborative relationship between service providers and faculty in the acceptance of UDI. As one service provider stated, "I think, again, how it's [UDI] presented makes a huge difference to the faculty...it's a great deal in the presentation and the relationship that is developed."

#### *Service providers' role in promoting UDI*

Participants were asked to describe roles that they could undertake to promote UDI. Their responses clustered into three categories, including the need for administrative support in promoting UDI, the service provider's role in promoting UDI, and changes in the service provider's role in a campus environment characterized by UDI.

*Need for support.* In many cases, participants expressed the belief that strong administrative leadership would be essential to their efforts to promote UDI. One participant stated:

"It could not come from my office. I think all credibility would be lost if it came from my office...because then it would be seen as an accommodation, again, for students with disabilities. It would not be seen as the Universal Design that it truly is."

*Service providers' roles.* Several service providers described providing information to influential campus leaders as a way to promote the acceptance of UDI.

As one participant noted, "I would take this back to the retention committee, and they could take that to the faculty, the faculty council in our case." Several service providers also described providing data collection services and support to faculty. One participant stated, "Because in our job we are putting together strategies...and we can help professors apply their information to those strategies. We may not be the content experts, but we have that expertise that they might not have." Another stated, "We could be the source of research or the source of data collection and how that would be beneficial." Service providers also identified experiences that would be relevant to their role in promoting UDI on their campus. One service provider described the relevance of UDI to an interaction she had shared with a professor:

"[UDI would entail] less work for him, because his whole thing to me was, "I have 250 students in x number of classes, in each of my classes, and I can't do this and such for this one particular student." So it would be not having to make individual accommodations."

Another service provider described working in an environment of increasing diversity at her institution and how this change in student demographics could be used to promote UDI:

"Our population of our institution is increasing...we will get more nontraditional students...I think this is going to be a research question. What are you projecting, what do you see your school doing in 5 or 10 years, a curriculum change, to include or incorporate everybody into your classroom?"

*Changes in service providers' roles.* The focus group participants also described changes to their role as disability service providers if UDI were implemented on their campus. Service providers predicted positive changes in their daily responsibilities, positive changes in their status within the campus community, or no major changes at all.

Many participants predicted that the implementation of UDI on their campus would lead to positive changes in their day-to-day responsibilities. Responses about positive change were grouped into four categories including accommodations, proactive practices, record keeping, and strategies instruction. Most of the comments depicted UDI as an effective method for accommodating students while affording service provid-

ers additional time to pursue non-mandated responsibilities such as strategies instruction. One service provider immediately identified a fiscal benefit related to accommodations, noting that UDI would “lessen my budget... We pay notetakers \$50 an hour... That wouldn’t be necessary. That would be quite a savings.” Another participant identified a proactive practice, anticipating that UDI would provide “more time for data collection on things that do work and look at ways to improve programs. We don’t always get time to do that because we are always sticking our fingers in holes of a dike...” One participant reflected on changes in record keeping if more students were accommodated in the UDI classroom, commenting, “I think it would change my job to be more of just a paper pusher. Documentation; maintaining the records possibly.” Another service provider envisioned changes in the effectiveness of the strategies instruction she currently provides:

So when you are actually sitting down with that student to provide the support, the information is there and because it is coming from possibly just the professor directly or it was verbatim the lecture, you’re able to help that student instead of trying to find what they are getting at in their notes or following the notetaker’s notes.

In addition to changes in daily responsibilities, service providers also predicted that UDI would change their status on campus. Comments were categorized as changes in how others would view service providers or changes in how service providers would view themselves. Several service providers thought UDI would change how campus colleagues regard them. As one participant said:

“It depends on the stance we take. If we take an active stance, then I think you will see professors coming to you in a new role that’s more proactive, rather than dike-filling. So they’ll be looking for that type of leadership.”

Another participant predicted that UDI would lead to greater acceptance of the work done by disability service providers, commenting:

“I also think that perhaps my services would be more accepted, because one thing that I have seen about universal design is that this design not only helps disabled students but also helps students with non-disabilities, because they need to access the same stuff... People wouldn’t look at me like I am advocating more for something as totally way out of the

realm than what you would do for any other student.”

Several service providers also predicted that UDI would change how they view their status. Comments focused on a newly collaborative partnership with campus colleagues. As one participant said, “We are all on the same team rather than the disability office saying, ‘You have to do this, you have to do this’ and the other folks resisting.”

Participants predicted that minimal changes to the operation of their offices would result from the implementation of UDI on their campus. Several participants commented that disability service providers would still need to keep track of documentation and provide some accommodations even after faculty members adopted UDI. A participant stated:

“I don’t see any major changes. You are still going to have to identify where the problems are and how people address those problems and still doing the documentation process and all. I think there might be a little less accommodating that needs to be done because issues will be addressed in the classroom.”

Another participant predicted the continuing need to provide accommodations and offer study strategies even after the widespread implementation of UDI, stating:

“UDI is not the, like, the panacea for everything. I think it would go a long way in reducing the need for accommodations if time was not an issue to faculty and every student had as much time as they needed, or some parameter of time. But, still, there is always going to be the need for strategies because the faculty member is still trained not to teach, but to know his content areas.”

With administrative support for the implementation of UDI, service providers believed they could work more collaboratively with faculty to help all students learn, while continuing to provide strategies instruction and accommodations for students with disabilities.

#### *Supports needed by Service providers to Promote UDI*

Service providers’ statements about the need for support in promoting UDI clustered into three categories, including the need for more information about UDI, the need for support from campus leaders and influential campus groups, and the ability to influence mecha-

nisms that promote institutional change.

*Need for more information about UDI.* Several service providers expressed a need for additional information, including research about UDI. One service provider stated, "I would have to find out a lot more about UDI because I don't know that much about it." Several service providers mentioned needing data about the efficacy of UDI, using statements such as "empirical evidence that it works," "You can't argue with numbers," and "Here is proof positive that under implementation this is successful." One participant described the kind of data that she believed would be most helpful in implementing UDI, using the statement, "Retention is improved, grades go up." Another participant stated that it would be helpful to know "where it is being used now." Participants also expressed the need for more information about the role of technology in implementing UDI. One participant questioned another focus group member's belief about the necessity of expensive technology as a precursor to UDI, commenting, "I didn't know, I didn't assume that at all. I am thinking of making sure there is a diversity of approach in the way that the material is presented."

*Need for support from campus leaders.* A majority of service providers identified strong endorsements from influential campus leaders as the primary form of support they would need. As one participant stated, "I would have to find out who has the ear of the faculty, who are the people the faculty really listen to on the campus." Participants identified individuals and groups that could provide this type of leadership. The individuals included campus administrators such as the president or chancellor and academic leaders such as a vice president for academic affairs, provost, division coordinators, deans, and particular professors. Describing the efficacy of promoting UDI to the provost on her campus, one participant stated, "He is very supportive of our services, but also of diversity on campus. I think he would be pretty powerful." Participants also identified groups that could promote UDI, including a Center for Teaching and Learning, the faculty union, the faculty senate, the ADA committee, and the retention committee. In a statement about needing support from division coordinators in order to promote UDI on her campus, a participant said they "would need to be really sold on it" in order to persuade the faculty to implement UDI.

*Need for ability to influence institutional change.* Participants also described campus-wide mechanisms that could be utilized to promote UDI, including a "chain of command" sequence. One service provider described

a top-down process that could begin if the institution's president: "If he were to say, 'This is a great idea,' and go to the vice president of academic affairs and say, 'Get the deans together, get the department chair people together, and this is what we would like to try to go towards.'" Another service provider stated, "I may be able to build a relationship one-on-one with a lot of individual faculty and then those faculty will go on to their departments and kind of spread the word." One participant described the need to obtain support for UDI from the faculty senate on her campus, stating, "It would have to be the group, the faculty senate, that would think it was important. They would pressure the dean and the president to implement it." Incentives were also mentioned as a means of promoting UDI. One participant pointed out, "I think maybe some sort of endorsement is needed, I don't know what that may be, maybe some sort of, I don't know if it would be honor or monetary, whatever to make it a positive thing."

## Discussion

UDI entails a significant change in institutional efforts to provide equal access to education. Sixteen postsecondary disability service providers who participated in two focus groups provided their perspectives about the implementation of UDI, described their roles and responsibilities within campuses that embraced UDI, and described the institutional supports they would need to advocate for the adoption of UDI.

This study's first research question asked what the perceptions of postsecondary disability service providers were concerning the strengths and weakness of UDI. Among the strengths of UDI identified by the participants were enhanced recruitment and retention of a diverse student body, provision of effective instruction to all students, empirical support for the scholarship of university teaching, and the reduction of stigmas associated with disabilities. Participants believed that these strengths were congruent with institutional, faculty, and student priorities, which is an important consideration when disability access policies are considered. Brinckerhoff et al. (2002) noted that institutional priorities must be taken into account if a service provider is to be an effective advocate for change. Participants also described potential weaknesses of UDI, including faculty resistance, training issues, technology requirements, limited student self-advocacy opportunities, service providers' lack of expertise in instruction, and lack of a legal mandate to implement UDI. A source of faculty resistance at research institutions may be found in



a faculty reward system that values research over teaching. As Lazerson et al. (2000, p. 19) stated, "The efforts to change teaching and improve learning are essentially battles over institutional values, rewards and behavior".

The second research question focused on the perceptions of postsecondary disability service providers about their role in promoting UDI as a campus initiative and whether UDI would alter their current responsibilities. Participants identified a variety of roles they could assume to promote UDI, including disseminating information to influential campus leaders, offering data collection services and support to faculty members who utilized UDI, and inviting faculty grappling with less time to consider UDI's ability to efficiently accommodate increasingly diverse learners. Focus group participants recognized that faculty instructional skills are valued differently, depending on campus culture and academic discipline. This finding is in keeping with research on faculty attitudes towards instruction in higher education (Gaff & Wilson, 1975; Chickering & Gamson, 1987; Finkelstein, Seal & Shuster, 1998; Shulman, 2002). In describing how they could manage the process of using UDI to enhance institutional access to students with disabilities, participants reflected the professional role of change agency espoused by Shaw (1997). If UDI did result in a reduction of the need for individual accommodations on their campuses, participants envisioned having more time to provide nonmandated services such as data collection, and changes in their time spent documenting the accommodations received by students.

The third research question concerned participants' perceptions about the supports service providers would need to influence the wider adoption of UDI on their campuses. Salzberg, et al. (2002) found that disability service directors identified administrative support as critical to their efforts to train faculty about accommodations issues. Similarly, participants in this study stated that they would need support from campus leaders and influential campus groups to implement UDI. At the same time, service providers identified a need for more knowledge about UDI, including the extent to which instructional technology is a required component and what the emerging research suggests about the efficacy of UDI.

Interviewing participants within focus groups produces a particular type of data, emphasizing depth rather than breadth. An in-depth record of the perceptions of focus group participants is useful in describing new areas of inquiry such as UDI and provides insights into issues and perceptions that may be present for the general population of disability service providers. This

study offers a specific set of observations expressed in the participants' own words. However, in keeping with qualitative methodology, the use of a purposive sample and a focus on rich descriptive information from a small number of participants precludes the ability to generalize results beyond this group of participants.

These disability service providers offer important insights into current and future needs for successfully implementing the principles of UDI in higher education. A direction for future research might include studies of disability service providers' perceived needs in assuming a more collaborative role with faculty in a UDI campus environment. If disability service providers are to be able to work more collaboratively with faculty, learning centers, and academic deans to enhance instructional access, opportunities for professional development will be important. Novice disability service providers might especially value training opportunities emphasizing the development of these skills. Focus group members described data collection as a potential role they could assume to promote UDI. Another important direction for future research is to identify the skills that disability service providers would find essential to this new or expanded role. Focus group members also identified learning strategies as one of their areas of expertise and described faculty as the content experts. What technological supports would assist disability service providers in their role of sharing knowledge about learning strategies with interested faculty?

As an emerging approach to providing more inclusive instruction, UDI is being built through implementation and research in postsecondary settings. In the cyclical process of developing, researching, and refining inclusive instructional practices; the perceptions and expertise of key stakeholders, including students with disabilities, administrators, postsecondary disability service providers, and exemplary faculty play an important role. Research that focuses on student learning outcomes will be particularly useful to developing this understanding. As this approach to inclusive instruction continues to take root among college faculty interested in improving instruction for diverse learners, disability service providers will play an essential leadership role in enabling and nurturing the systemic change that is the vision of a truly inclusive instructional environment.

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# Appendix A

## The Principles of Universal Design

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**UNIVERSAL DESIGN:** The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

Compiled by advocates of Universal Design, listed in alphabetical order: Bettye Rose Connell, Mike Jones, Ron Mace, Jim Mueller, Abir Mullick, Elaine Ostroff, Jon Sanford, Ed Steinfeld, Molly Story, and Greg Vanderheiden. The authors, a working group of architects, product designers, engineers and environmental design researchers, collaborated to establish the following Principles of Universal Design to guide a wide range of design disciplines including environments, products, and communications. These seven principles may be applied to evaluate existing designs, guide the design process and educate both designers and consumers about the characteristics of more usable products and environments.

### PRINCIPLE ONE: Equitable Use

The design is useful and marketable to people with diverse abilities.

### PRINCIPLE TWO: Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

### PRINCIPLE THREE: Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

### PRINCIPLE FOUR: Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

### PRINCIPLE FIVE: Tolerance for Error *Journal of Postsecondary Education and Disability, Vol. 18 No. 1*

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

### PRINCIPLE SIX: Low Physical Effort

## Appendix B

### *Three Additional Resources Referenced in the Development of the Principles of UDI*

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#### Resource 1      Seven Principles of Good Practice in Undergraduate Education (Chickering & Gamson, 1987)

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1. Encourages contacts between students and faculty.
  2. Develops reciprocity and cooperation among students.
  3. Uses active learning techniques.
  4. Gives prompt feedback.
  5. Emphasizes time on task.
  6. Communicates high expectations.
  7. Respects diverse talents and ways of learning.
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#### Resource 2      Universal Access Principles for Designing Curriculum (Kameenui & Carnine, 1998)

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1. Big Ideas – Concepts, principles or heuristics that facilitate the most efficient and broad acquisitions of knowledge
  2. Conspicuous Strategies – Useful steps for accomplishing a goal or task
  3. Mediated Scaffolding – Instructional guidance provided by teachers, peers, materials, or tasks
  4. Strategies Intervention – Integrating knowledge as a means of promoting higher-level cognition
  5. Judicious Review – Structured opportunities to recall or apply previously taught information
  6. Primed Background Knowledge – Preexisting information that affects new learning
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#### Resource 3      Three Essential Qualities of Universal Design for Learning (CAST, 2002)

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1. Curriculum provides multiple means of representation
  2. Curriculum provides multiple means of expression
  3. Curriculum provides multiple means of engagement
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## Appendix C

The Principles of UDI © (Scott, McGuire & Foley, 2003)

Principle of UDI ©	Definition
Principle 1. Equitable Use.	Instruction is designed to be useful to and accessible by people with diverse abilities. Provide the same means of use for all students; identical whenever possible, equivalent when not.
Principle 2. Flexibility in Use.	Instruction is designed to accommodate a wide range of individual abilities. Provide choice in methods of use.
Principle 3. Simple and Intuitive.	Instruction is designed in a straightforward and predictable manner, regardless of the student's experience, knowledge, language skills, or current concentration level. Eliminate unnecessary complexity.
Principle 4. Perceptible Information	Instruction is designed so that necessary information is communicated effectively to the students, regardless of ambient conditions or the student's sensory abilities.
Principle 5. Tolerance for error.	Instruction anticipates variation in individual student learning pace and prerequisite skills.
Principle 6. Low Physical Effort.	Instruction is designed to minimize nonessential physical effort in order to allow maximum attention to learning. NOTE: This principle does not apply when physical effort is integral to essential requirements of a course.
Principle 7: Size and Space for Approach and Use.	Instruction is designed with consideration for appropriate size and space for approach, reach, manipulations, and use regardless of a student's body size, posture mobility, and communication needs.
Principle 8. A Community of Learners.	The instructional environment promotes interaction and communication among students and faculty.
Principle 9. Instructional Climate.	Instruction is designed to be welcoming and inclusive. High expectations are espoused for all students.

*Note.* Adapted from "Universal Design for Instruction: A framework for anticipating and responding to disability and other diverse learning needs in the college classroom," by S. S. Scott, J. M. McGuire, and T. E. Foley, 2003, *Equity and Excellence in Education*, 36, 40–49.

## Appendix D

### Protocol

- 1) Icebreaker: (brief, round robin to get everyone talking)
    - Think of experiences or interactions you have had with faculty who are teaching students with LD or ADHD. What were some of the questions that faculty posed related to teaching these students?
  - 2) UDI has been proposed as an approach to faculty development that will enhance inclusive teaching.
    - What do you see as the strengths/advantages of a UDI approach?
    - What do you see as the weaknesses or possible pitfalls of UDI?
  - 3) If UDI is to become a prominent means of faculty development, it will need proponents and leadership on campus. Think about your own campus for a minute.
    - Who would need to be involved in a leadership role to make this happen on your campus?
    - What are some of the different roles that OSD may need to play in promoting UDI as a campus initiative?
      - o What kinds of information, support, resources do OSD need to fulfill these roles?
      - o “My office needs \_\_\_\_\_ to support/encourage faculty to implement UDI.”
  - 4) What impact do you think UDI will have on the operations of your OSD office?
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