



Universal Design for Learning: University Faculty Stages of Concerns and Levels of Use A Faculty Action-Research Project

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Increasingly, students with disabilities are attending postsecondary schools. As with any form of diversity, there are also pedagogical challenges and opportunities that go beyond accommodation and support the goal of learning for all. This paper describes the results of the data collection phase of a faculty action-research project that grew from a core group of university faculty members' concerns about how best to support students with disabilities on campus. A researcher-developed survey was used to identify faculty members' stages of concern about and use of nine Universal Design for Learning guidelines in their classes. Findings reveal that the 46 respondents were at the stage of being largely concerned with learning more about the nine guidelines. The results provide a snapshot of initial stages of concern. Recommendations for action are provided.

Keywords: students with disabilities, universal design, faculty concerns, level of use

Background

Federal laws, such as the Individuals with Disabilities Education Improvement Act (IDEA; 2004) and the landmark Americans with Disabilities Act (1990), have affirmed the rights of persons with disabilities to equal protection and access to the U.S. educational system. These policies are exemplars of a shift in society's attitude toward and acceptance of "disability as a natural and normal part of the human experience" (Silverstein, 2000, p. 1695). Over time, the number of students with disabilities in higher education has trended upward, at least in part, because of federal policies and the changing zeitgeist. Recent data indicate that "eleven percent of undergraduates reported having a disability in 2007-2008" (Snyder & Dillow, 2011, p. 282). While these students were similar to their peers in terms of race, gender, age, and schools attended, they reported having a wide range of disabilities (U.S. GAO, 2009).

The challenges faced by postsecondary institutions in supporting students with disabilities cover a

broad range of issues, among them helping students and faculty to understand students' legal rights and providing accommodations and specialized services that cover a multitude of disability related challenges that students might face. The significance of the challenges faced has been described in a U.S. GAO (2009) report with one outcome being a federal workgroup that undertook the task of developing and implementing coordinated technical assistance for schools. As with any form of diversity, there are also pedagogical challenges and opportunities that go beyond accommodation and support the goal of learning for all.

Local Context and Purpose of the Study

So too, anecdotal information from the first author's University faculty, staff, and students underline significant challenges faced by several undergraduate students with disabilities on campus as well as the faculty members who teach them. The identified issues—both large and small—include barriers to physical mobility, use of various educational technologies, and adapting

instruction. This study grew from concern, on the part of a core group of five faculty members in one of the University's colleges, on how best to serve students with disabilities. Specifically, a disability focused learning community was formed to provide campus-wide learning opportunities for faculty, staff, and students. To this point in the time, there had not been a faculty driven effort of this type. An initial focus of the learning community was faculty concerns about instructing students with disabilities. Hall and Hord (2006) explained concerns are not necessarily fears, anxieties, or worries, but rather "the composite representation of the feelings, preoccupation, thought, and consideration given to a particular issue or task" (p. 138). As one illustration, a mathematics professor had described having difficulty understanding how to deal with a student with Asperger's syndrome self-regulating in class. In response, the paper's lead author, and a member of the learning community, called upon a colleague, who is considered a national expert on students with Asperger's syndrome in higher education, to provide a brief introductory workshop. The lead author has been involved in disability issues throughout her professional career in, among other capacities, as a certified special education and an advocate.

While the workshop was well received, it was apparent that a more systematic approach to understanding faculty concerns about differentiating instruction and making accommodations for students with disabilities was needed. The second author has a particular interest in studying adoption of *innovations*. Here, innovation refers to anything that is new to individuals such as the implementing instructional strategies that might make curriculum accessible to all students, particularly those with disabilities. Concomitantly, the second author was particularly interested in learning about and applying the principles of universal design as it applies to learning in her own postsecondary setting and in her doctoral research. Universal design, as used here, is the intentional design of curricula, implementation of instruction, and assessment of learning so all students have equal access to learning, not simply equal access to information (Center for Applied Technology [CAST], 2011).

With all of this, we set out to conduct faculty action research that would simply describe faculty members' stages of concern about and levels of use of innovative curriculum and instructional strategies that would meet the diverse needs of various student populations. This paper presents the results of the data collection phase of the action research. Hall and Hord (2006, 2010) have conducted extensive work on the implementation of change and innovations, and their model was selected as the framework for this study. The three principles and nine guidelines of Universal Design for Learning (UDL; CAST, 2011) were employed as a point of reference for faculty thinking about instructional

innovations that would meet the needs of a diverse student body. Each of these models is explained next.

The Concerns Based Adoption Model

The Concerns Based Adoption Model (CBAM; Hall & Hord, 2006, 2010), which is evidence-based (Anderson, 1997), focuses on describing, measuring, and explaining the experiences of those attempting to implement an innovation. The model acknowledges that implementation of an innovation is a highly personal experience and assumes most individuals go through predictable stages. Each is characterized by questions and concerns about the innovation as it unfolds. Emphasis is on the diverse and unique meanings that individuals assign to the innovation. CBAM (Hall & Hord, 2006, 2010) has several elements that interact dynamically. They are the external environment (e.g., federal policies), the culture of the organization, the resource system, the change facilitator, ongoing diagnosis, and implementation of tailored interventions. There are three diagnostic dimensions: (a) Stages of Concern (SoC), Levels of Use (LoU), and Innovation Configurations (IC).

The responsibility for overseeing the innovation rests with the change facilitator, or agent. While the role can often be assigned to a single individual in a formal leadership position, Hall and Hord (2006) suggest that the "optimal arrangement for an organization is to have a leadership team" (p. 269). Key tasks for the team include addressing personal aspects of change, building supportive conditions by attending to organizational efficiencies, and acting strategically (Hall & Hord, 2010). The team would use both informal and formal tools to gather diagnostic information about how they might use resources and intervene to support individuals as they implement the innovation. More specifically, diagnosis would include: administering the SoC Questionnaire (George, Hall, & Stiegelbauer, 2008) to understand individual concerns related to the change process; developing LoU (Hall, Dirksen, & George, 2008) profiles to determine what individuals or groups are doing related to the innovation; and constructing and using IC maps, which chart a continuum of ways in which individuals might operationalize the innovation components, to document and assess fidelity of implementation (Hord, Stiegelbauer, Hall, & George, 2008).

In postsecondary settings, research employing various components of CBAM (Hall & Hord, 2006, 2010) has focused largely on the adoption of technology (Dobbs, 2004; Javeri & Persichitte, 2007; Wickersham & McElhany, 2010) with apparently no research that has applied this model to postsecondary faculty members' concerns about using teaching practices that are inclusive of students with disabilities. In K-12 settings, several researchers have used Hall and Hord's model to examine teachers' concerns about educational practices that are inclusive of students with disabilities (Pedron & Evans, 1990; Van den Berg, Slegers, Geijsel, & Vandenbergh,

2000; Wade, Welch, & Jensen, 1994). Regardless of the setting or foci, findings across both bodies of research reveal that when an individual’s stage of concern about adopting an innovation such as UDL (CAST, 2011) is identified and addressed the person is more apt to implement related practices.

The focus of the investigation was on faculty members’ reports of their stages of concern and levels of use of the three UDL (CAST, 2011) principles and the related guidelines in their classrooms; therefore, only the related CBAM (Hall & Hord, 2006, 2010) components were applied and they are explained next.

Stages of Concern. The stages of concern component comprises seven developmental stages of concern that cluster into four categories: unrelated, self, task, and impact (Hord, Rutherford, Huling, & Hall, 2006). Individuals at the unrelated stage either show no interest in the innovation or have interests related to other things. As the name implies, self-concerns are focused on oneself and learning about the innovation and acquiring the personal capacity for implementing the innovation. Task concerns are about managing the day-to-day aspects of the innovation. Impact concerns encompass those related to collaborating with others and making adjustment to or improving the innovation. Table 1 contains a summary of the stages of concern.

Levels of Use. The levels of use component covers eight characterizations of distinctly different observable patterns of individual behavior related to using the innovation and acquiring related knowledge and skills (Hall et al., 2008). The eight levels are clustered into two categories, nonusers and users. Nonusers are individuals who have not yet adopted or engaged in applying the

innovation. Users are individuals who are actively engaged with the innovation. Table 2 contains a summary of the levels of use.

Universal Design in Education

Burgstahler (2008) described universal design as an approach to developing environments, processes, or instruction that addresses the broadest array of abilities possible. The concept as it applies to physical environments and architectural barriers gained prominence in the 1980s (Banfield-Hardaway, 2010; Izzo, Murray, & Nova, 2008; Orr & Hammig, 2009). Over time, the notion of universal design evolved to not only include physical spaces and products, but also the design, implementation, and assessment of curriculum and instruction; student services; and information technology (Burgstahler, 2008). Juxtaposed to the provision of educational accommodations, which is more of a reactive approach to disability, universal design is “proactive and has as its goal the full inclusion of *all* students—regardless of gender, race, place of origin, first language, learning style, culture, background knowledge, disability and other characteristics” (Burgstahler, 2008, p. 24).

Earlier research on universal design in education was conducted more often in K-12 settings. Research in postsecondary settings has been building steadily since the 1990s (Chodock & Dolinger, 2009; Izzo et al., 2008; Silver, Bourke, & Strehorn, 1997) with many of the studies focused on the preparation of teachers for K-12 settings (Evans, Williams, King, & Metcalf, 2010; Schelly, Davies, & Spooner, 2011; Spooner, Baker, Harris, Ahlgrim-Delzell, & Browder, 2007). Today, there are several well-known approaches to the application of universal design in education that have built upon what is

Table 1
CBAM: Stages of Concern (Hall & Hord, 2010)

Categories	Stage of Concern	Stage Description
Impact	6. Refocusing	The individual is thinking about broader benefits of the innovation, including the possibility of introducing major changes or replacement of the innovations.
	5. Collaboration	The individual focuses on coordinating and collaborating with colleagues to improve the use of the innovation.
	4. Consequence	The individual focuses attention on the students affected by the innovation within his or her immediate sphere of influence.
Task	3. Management	The individual has shifted focus to the various processes and tasks required by the innovation. The focus is on efficiency, managing, and scheduling.
	2. Personal	The individual is uncertain about his or her ability to meet the requirements of the innovation, as well as his or her role in the innovation.
Self	1. Informational	The individual has a general awareness of the innovation and has an interest learning more. The interest is focused on substantive aspects of the innovation, not on his or her role in the innovation.
Unrelated	0. Unconcerned	The individual shows little or no concern about the innovation.

Table 2
CBAM: Levels of Use (Hall & Hord, 2010)

Categories	Level of Use	Description
Users	6. Renewal	Individual holistically re-evaluates the innovation to determine if major modifications would improve student learning and outcomes. Individual is considering alternative innovations as part of the process.
	5. Integration	Individual is collaborating with colleagues to improve student learning and outcomes.
	4b. Refinement	Individual varies the use of the innovation to improve student learning and outcomes.
	4a. Routine	Individual has been using the innovation for some time and the application of the innovation is consistent, with little or no changes. Little reflection is given to improving the application of the innovation or improving student outcomes.
	3. Mechanical	Individual is using the innovation with a focus on short-term, day-to-day use of the innovation. There is little time for reflection, activities are often disjointed and superficial, and changes in use benefit the individual, rather than the students.
	2. Preparation	Individual is preparing to use the innovation for the first time.
Nonuser	1. Orientation	Individual has recently acquired or is trying to acquire information about the innovation. The individual may also be acquiring information about the personal demands of the innovation.
	0. Nonuse	Individual has little or no knowledge of the innovation, and the individual is not doing anything toward becoming knowledgeable or involved.

known about effective instructional strategies for students with varying abilities (Burgstahler, 2008; CAST, 2011; Higbee & Goff, 2008; Rose, Harbour, Johnston, Daley, & Abarbanell, 2006; Scott, McGuire, & Foley, 2003). Although the models have varied emphases, at their core is the principle that the problem is with the environment not individual students.

Of all the approaches, UDL (CAST, 2011) was chosen expressly as a means to illustrate inclusive curricular strategies for faculty participating in this study because references to UDL appear in several federal mandates and policy documents. In IDEA (2004), the term universal design for learning is defined as it is in the Assistive Technology Act of 1998. UDL is also mentioned in the U.S. Department of Education’s (2010) blueprint for reauthorizing the Elementary and Secondary Education Act, which identifies UDL as necessary for supporting all learners in literacy and mathematics. Germane to the present investigation, UDL is referred to by name and is written into in several sections of the Higher Education Opportunity Act of 2008. The act also provides a statutory definition of UDL in Section 103(a):

(24) UNIVERSAL DESIGN FOR LEARNING.—The term ‘universal design for learning’ means a scientifically valid framework for guiding educational practice that—

(A) provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and

(B) reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient.

An underlying assumption of UDL (CAST, 2011) is that students learn best when provided with multiple opportunities and a variety of methods to access and apply knowledge. UDL encompasses three broad principles that center on using a variety of ways to: (a) represent and teach important course concepts, (b) engage students in learning, and (c) have students demonstrate their knowledge or skills. Each principle has three guidelines that apply to instructional goals, methods, materials, and assessments and provide a framework from which faculty can build a flexible, inclusive learning environment to scaffold and differentiate learning for a broad range of students. Table 3 contains a summary of the principles and guidelines.

Finally, UDL (CAST, 2011) was also selected

Table 3
Principles and Guidelines of Universal Design for Learning (CAST, 2011)

Principles and Guidelines	Descriptors
Principle I: Provide Multiple Means of Representation	Provide content and materials in a variety of formats, including physical, symbolic, and linguistic examples.
Guideline 1: Provide options for perception	Offer content and materials in multiple, flexible formats (audio, visual, tactile).
Guideline 2: Provide options for language, mathematical expressions, or symbols	Clarify language, mathematical expressions, or symbols and scaffold understanding with alternative or multiple representations.
Guideline 3: Provide options for comprehension	Build on or supply background knowledge, emphasize important ideas, and support cognitive and metacognitive strategies.
Principle II: Provide Multiple Means of Action and Expression	Provide multiple and varied opportunities for students to demonstrate their knowledge and skills.
Guideline 4: Provide options for physical action	Use varied and alternative ways for students to physically interact with instructional materials or complete instructional tasks.
Guideline 5: Provide options for expression and communication	Offer multiple media, tools, opportunities, and formats for students to demonstrate their knowledge and understanding of a subject.
Guideline 6: Provide options for executive functions	Support students' goal setting, planning, information and resource management, and progress monitoring.
Principle III: Provide Multiple Means of Engagement	Provide students with multiple and varied opportunities to develop and sustain interest in a topic, as well as monitor their skill and knowledge development.
Guideline 7: Provide options for recruiting interest	Present relevant learning activities with authentic opportunities for students to make choices, while reducing threats and negative distractions.
Guideline 8: Provide options for sustaining effort and persistence	Build in reminders, vary the level of task demand, and foster collaboration among students.
Guideline 9: Provide options for self-regulation	Foster self-reflection present opportunities for students to monitor their knowledge and skill development.

for use in this study because the three principles are based in neurological research and “three spatially and functionally distinguishable brain systems”—recognition, strategic, and affective (Myers & Rose, 2000, p. 40). The brain’s recognition system enables us to sense and assign meaning to patterns such as voice (auditory patterns) or letters and words (visual patterns) among others (Myers & Rose, 2000; Rose, 2001). The brain’s strategic system enables us to plan, execute, and self-monitor actions and skills (Myers & Rose, 2000; Rose, 2001, p. 66). The affective system is responsible for evaluating patterns and assigning emotional significance to them (Myers & Rose, 2000; Rose, 2001). Rose (2001) explained “each principle aims to minimize barriers and maximize learning by flexibly accommodating individual

differences in recognition, strategy, or affect respectively” (p. 66). Importantly, individuals differ greatly in how each of these systems function; and philosophically underpinning UDL is the notion that, from the beginning, curriculum, instruction, and related products should be developed to be flexible enough to accommodate these differences.

Study Design and Methods

The design of this inquiry was faculty action research. Action research is an approach in which a researcher focuses on identifying “an appropriate solution for the particular dynamics at work in a local specific situation” (Stringer, 2007, p. 5). This type of investigation involves a cycle of inquiry in which the researcher looks, thinks, and acts in an effort to

Table 4
Sample Survey Items and Alignment of Response Choices with Stages of Concern and Levels of Use

Sample Stage of Concern Item	Response Alignment with Stage of Concern
Which of the following statement best describes your stage of concern about providing students with options for perception in your instruction? • I have provided options for perception but I think I have found something that would work even better. • I am concerned about how my providing options for perception relates to my colleagues’ instructional practices. • I am thinking about how providing options for perception is affecting my students. • I feel like I am spending all of my time getting material ready to provide options for perception. • I am thinking about how providing options for perception will affect me. • I am interested in learning how to provide options for perception. • I am not interested in or concerned about options for perception.	6. Refocusing 5. Collaboration 4. Consequence 3. Management 2. Personal 1. Informational 0. Unconcerned
Sample Level of Use Item	Response Alignment with Level of Use
Which of the following statements best describes your level of using options for perception in your instruction? • I have been using options for perception for an extended period. At this time, I am looking to make major improvements in the way I use it. • I have been using options for perception to improve outcomes and I am sharing my experiences with colleagues. • I have been using options for perception for a while and I am beginning to make changes to improve outcomes. • I am comfortable using options for perception and it has become a part of my routine instructional strategy. • I am using options for perception with a focus on short-term actions, as I have little time for reflection. • I am preparing to use options for perception for the first time. • I have recently learned about how to use options for perception. • I have little or no knowledge about how to use options for perception.	6. Renewal 5. Integration 4b. Refinement 4a. Routine 3. Mechanical 2. Preparation 1. Orientation 0. Nonuse

understand how and why individuals act as they do (Stringer, 2008). The action-research inquiry process encompasses five main processes: (a) designing the study, (b) collecting data, (c) analyzing data, (d) communicating outcomes, and (e) taking action (Stringer, 2008).

The design phase of this inquiry involved identifying an issue worthy of investigation and developing an ethical, trustworthy (i.e., quality) plan for how the study would be conducted (Stringer, 2007, 2008). The background and rationale for studying faculty members’ stages of concern and levels of use UDL in their classrooms were explained earlier. The research proposal was reviewed and approved by University’s

Human Subjects Committee for the conduct of ethical research. The remainder of this section provides a description of how the study was conducted. The outcomes of the study are shared in the section on results, and a broad recommendation for action is provided in the final section of the article.

Data Collection

Data collection is the *look* part of the inquiry cycle (Stringer, 2007, 2008). The process used for gathering information was a researcher-developed survey (Wilken, 2011) that was administered via an online survey service. The survey contained 18 questions that queried respondents about their stage of concern with

Table 5
 Ranges: Characterization of UDL Principle Scores According to the Stages of Concern and Levels of Use

SoC Categories	Stage of Concern	SoC Score Range	LoU Categories	Level of Use	LoU Score Range
			Users	6. Renewal	22-24
Impact	6. Refocusing	19-21		5. Integration	19-21
	5. Collaboration	16-18		4b. Refinement	16-18
	4. Consequence	13-15		4a. Routine	13-15
Task Self	3. Management	10-12		3. Mechanical	10-12
	2. Personal	7-9	Nonuser	2. Preparation	7-9
Unrelated	1. Informational	4-6		1. Orientation	4-6
	0. Unconcerned	3		0. Nonuse	3

implementing UDL and their level of use of UDL (CAST, 2011) in their classrooms. The questions were organized under the three UDL principles and the nine guidelines. There were three items for each principle. Descriptions of UDL and each of the principles and guidelines were provided. For each guideline, participants were asked to respond to two questions—one about their stage of concern and one about their level of use. Modeled after the work of Hall and Hord (2006), which is the framework that guided the investigation, the stage of concern questions had seven response choices and the level of use questions had eight response choices. Table 4 contains sample items and depicts the alignment of the item response choices with the associated CBAM component (Hall & Hord, 2010).

The key informants for this study were University faculty. Three e-mail contacts were made with roughly 300 individuals using e-mail addresses that were readily available on the University’s Website. There was no way to determine in advance which addresses belonged to faculty and which did not belong to faculty. The e-mails contained a link to the informed consent form and a link to the survey, which was a unique URL that was automatically created for each potential respondent. This URL was encrypted with SSL for added security during survey taking. The second and third e-mails were sent only to non-respondents. The linked informed consent form was used because the online survey e-mail system does not allow attachments.

Data Analysis

The data analysis, or the *think* part of the inquiry cycle (Stringer, 2007, 2008), was implemented as follows. The raw survey data were downloaded online to a Comma Separated Value (.CSV) file and imported into Microsoft® Excel®. Data were inspected and imported into SPSS for further analysis. Scoring the instrument involved assigning numerical values to each of the response choices. Each of the seven response choices for the stages of concern items was assigned a value of 1

through 7 (i.e., 1 = *Unconcerned*, 2 = *Informational*, 3 = *Personal*, 4 = *Management*, 5 = *Consequence*, 6 = *Collaboration*, 7 = *Refocusing*). Each of the eight response choices for the level of use items was assigned a value of 1 through 8 (i.e., 1 = *Nonuse*, 2 = *Orientation*, 3 = *Preparation*, 4 = *Mechanical*, 4 = *Routine*, 6 = *Refinement*, 7 = *Integration*, 8 = *Renewal*). A stage of concern score and a level of use score for each UDL principle was computed in SPSS® by summing the values for related items, with the range of possible scores for any given principle 3-21 and 3-24 respectively. Data were analyzed using descriptive statistics, and frequencies and percentages were calculated.

To better report and qualitatively describe the survey results, respondents’ principle scores were characterized according to Hall and Hord’s (2006, 2010) seven stages of concern and eight levels of use. Table 5 contains a summary of the ranges. The cut offs for characterizing the SoC and LoU principle scores were established in the same way, and an example for each follows. For an SoC principle score to be characterized as falling within the informational stage of concern range, the sum of the values for the three related items for any given principle had to be greater than 3 and less than or equal to 6 (i.e., 4-6). To be characterized as falling within the orientation level of use range, the sum of the values for the three related items for any given principle had to be greater than 3 and less than or equal to 6 (i.e., 4-6).

Sample. In all, 75 faculty members responded to the survey; 46 surveys were complete, and only those surveys were used in this analysis. Of the 46 respondents, 61% (*n* = 28) were males, 31% (*n* = 18) were females, 89% (*n* = 41) were full-time, and 11% (*n* = 5) were part-time faculty members. Fifty percent (*n* = 23) had been at the university more than 10 years and 80% (*n* = 37) had a doctoral degree.

Results

Table 6 contains a list of the principles and guidelines along with the most frequently selected

Table 6
 Respondents' (N = 46) Primary Stage of Concern and Level of Use: UDL Guidelines

	SoC/LoU	n	%
Principle I: Provide Multiple Means of Representation			
Guideline 1: Provide options for perception			
I am interested in learning how to provide options for perception	SoC 1	24	52%
I have little or no knowledge about how to use options for perception	LoU 1	22	48%
Guideline 2: Provide options for language, mathematical expressions, and symbols.			
I am interested in learning how to provide options for language, mathematical expressions, and symbols	SoC 1	23	50%
I have little or no knowledge about how to use options for language, mathematical expressions, and symbols	LoU 1	26	57%
I have little or no knowledge about how to use options for comprehension	LoU 1	22	48%
Principle II: Provide Multiple Means of Action and Expression			
Guideline 4: Provide options for physical action			
I am interested in learning how to provide options for physical action	SoC 1	26	57%
I have little or no knowledge about how to use options for physical action	LoU 1	30	65%
Guideline 5: Provide options for expression and communication			
I am interested in learning how to provide options for expression and communications	SoC 1	25	54%
I have little or no knowledge about how to use options for expression and communication	LoU 1	24	52%
Guideline 6: Provide options for executive functions			
I am interested in learning how to provide options for executive function	SoC 1	21	46%
I have little or no knowledge about how to use options for executive function	LoU 1	22	48%
Principle III: Provide Multiple Means of Engagement			
Guideline 7: Provide options for recruiting interest			
I am interested in learning how to provide options for recruiting interest	SoC 1	25	54%
I have little or no knowledge about how to use options for recruiting interest	LoU 1	21	46%
Guideline 8: Provide options for sustaining effort and persistence			
I am interested in learning how to provide options for sustaining effort and persistence	SoC 1	22	48%
I have little or no knowledge about how to use options for sustaining effort and persistence	LoU 1	23	50%
Guideline 9: Provide options for self-regulation			
I am interested in learning how to provide options for self-regulation	SoC 1	27	59%
I have little or no knowledge about how to use options for self-regulation	LoU 1	24	53%

Note. SoC 1 = Self, informational stage of concern; LoU 1 = non-user, orientation level of use.

Table 7
 Frequencies and Percentages of Respondents' (N = 46) Stages of Concern Principle Scores Categorized by Stage of Concern

	Stage of Concern		UDL Principle 1		UDL Principle 2		UDL Principle 3	
			n	%	n	%	n	%
Impact	6.	Refocusing	5	10.9	3	6.5	4	8.7
	5.	Collaboration	2	4.3	1	2.2	7	15.2
	4.	Consequence	4	8.7	6	13.0	0	—
Task	3.	Management	7	15.2	7	15.2	8	17.4
	2.	Personal	8	17.4	6	13.0	4	8.7
Self	1.	Informational	18	39.1	21	45.7	21	45.7
	0.	Unconcerned	2	4.3	2	4.3	2	4.3

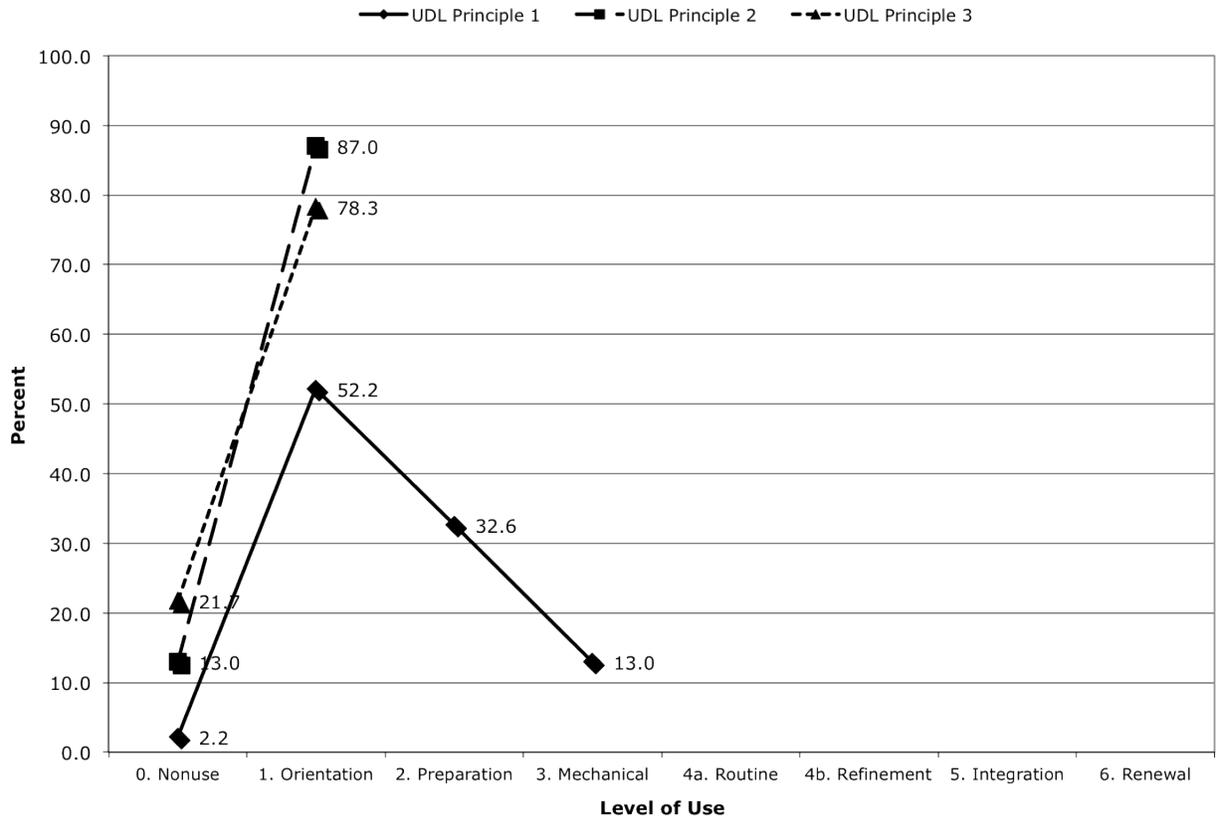


Figure 1. Percentage of faculty at each stage of concern.

response choice. For all UDL guidelines, 46% ($n = 21$) or more of respondents ($N = 46$) indicated they were at the informational stage of concern (SoC 1). George et al. (2008) explained that individuals at this stage have more of an impersonal interest in learning about “substantive aspects of the innovation, such as general characteristics, effects, and requirements for use” (p. 8). Similarly, 46% ($n = 21$) or more of respondents ($N = 46$) reported being in an orientation state (LoU 1) for all UDL guidelines. Individuals at this level of using aspects of an innovation are beginning to explore the innovation and acquire information (Hall et al., 2006).

Table 7 depicts the frequencies and percentages of respondents’ ($N = 46$) stage of concern principle scores categorized by stage of concern. For each of the principles, a majority of respondents largely reported their stage of concern centered on themselves. Self-concerns reflect an “egocentric frame of reference in terms of what the experience will be like for ‘me’ and whether ‘I’ can succeed” (Hall & Hord, 2006, p. 135).

Figure 1 provides a picture of the relative intensity of respondents’ ($N = 46$) stage of concern for each UDL principle and depicts a nonuser profile overall.

Table 8 depicts the frequencies and percentages of respondents’ ($N = 46$) level of use principle scores categorized by level of use. Overwhelmingly, respondents indicated they were nonusers with the majority at an orientation level of use for each principle. At this level, “the behaviors of the individual are related to learning more about the innovation, but no decision has been made to use it” (Hall & Hord, 2006, p. 162).

Implications for Practice and Action Steps

This paper presents the results of the data collection phase of a faculty action-research project that grew from University faculty members’ concern about how best to serve students with disabilities. The UDL principles and guidelines (CAST, 2011) were used as a point of reference for faculty to begin to think about proactively designing curricula, implementing instruction, and assessing what students’ know and are able to do so all students have equal access to learning, not simply equal access to information. For each of the UDL principles, the survey respondents largely indicated they were at a stage of concern that centered on themselves. At this stage, individuals are most often thinking about how an innovation will affect them personally, and what is

Table 8
 Frequencies and Percentages of Respondents' (N = 46) Level of Use Principle Scores Categorized by Level of Use

Level of Use	UDL Principle 1		UDL Principle 2		UDL Principle 3	
	n	%	n	%	n	%
Users						
6. Renewal	—	—	—	—	—	—
5. Integration	—	—	—	—	—	—
4b. Refinement	—	—	—	—	—	—
4a. Routine	—	—	—	—	—	—
3. Mechanical	6	13.0	—	—	—	—
Nonusers						
2. Preparation	15	32.6	—	—	—	—
1. Orientation	24	52.2	40	87.0	36	78.3
0. Nonuse	1	2.2	6	13.0	10	21.7

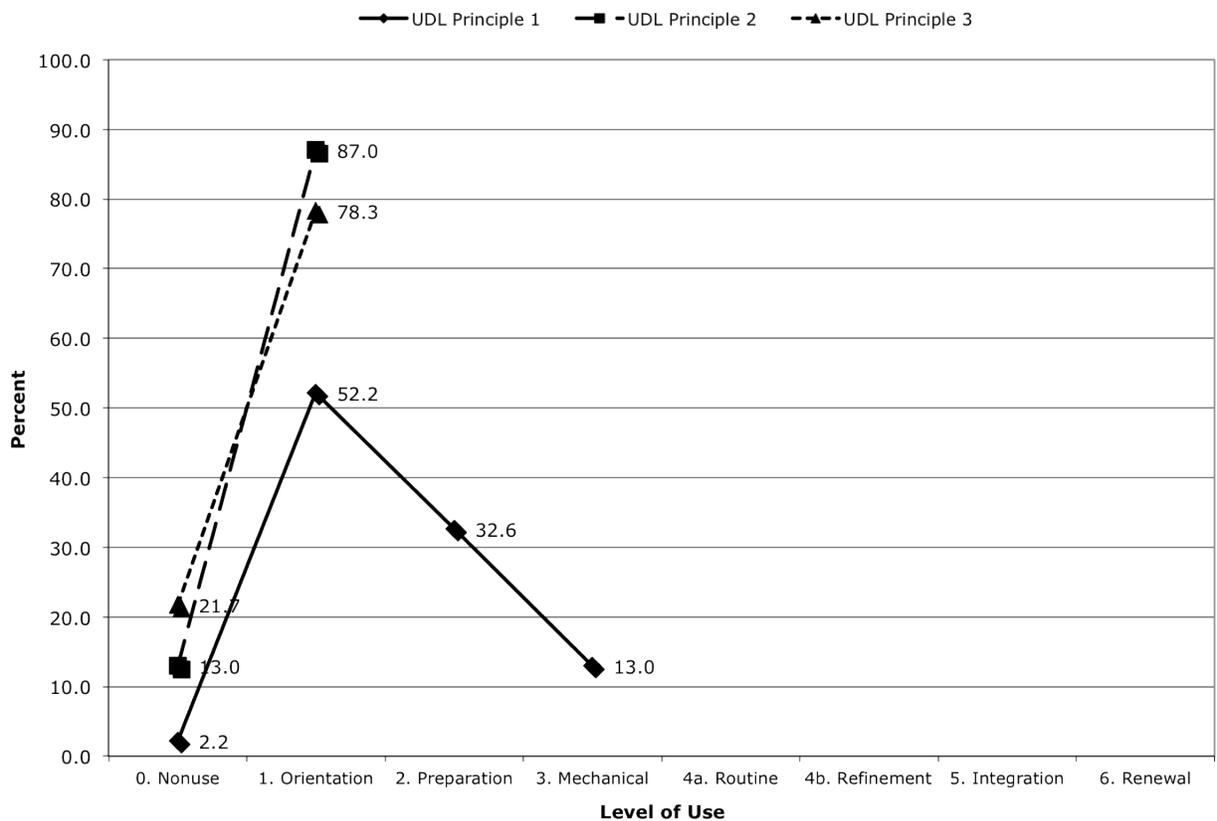


Figure 2. Percentage of faculty at each level of use.

required on their part in terms of effort, time commitment, and knowledge and skill development. Similarly, faculty overwhelmingly reported that they were nonusers with the majority at an orientation level of use for each principle. In other words, study participants were generally not applying the principles of UDL in their classes. The emergence of a nonuser profile might be attributable to the fact that there had not been any campus-wide

initiatives to provide faculty with training or information about UDL. Additionally, faculty might not be familiar with UDL or have been exposed to the concepts because the research and literature on its application in postsecondary settings is less robust than the work that has been done in K-12 settings.

Successful implementation of any innovation begins at the individual level with an understanding of a

person's stage of concern relative to the innovation (Hall & Hord, 2006; Hord et al., 2006). The results from data collection phase of this faculty action-research project provide clear indications that the survey respondents were interested in learning more about UDL. Baseline information about respondents' relative stages of concern with applying and using inclusive curricular strategies as defined in the survey provides a starting point for tailoring professional development experiences that could meet individual needs.

Concerning communicating the outcomes of the study, or the first step in the act part of the inquiry cycle (Stringer, 2007, 2008), a report detailing the survey results has been shared with the Assistant Provost and Dean of Faculty Development. Consideration is being given to how these data will be used to inform faculty development initiatives focused on quality learning experiences for all students and to the specific actions that will be taken. These deliberations represent a first step toward *taking action* (Stringer, 2007, 2008).

To achieve the greatest chance of success with faculty development and by extension implementation of UDL (CAST, 2011) in faculty classrooms, it is recommended that faculty learning-experiences be founded in what is known about effective professional development. Several researchers have identified important features of professional development that leads to success (Guskey & Yoon, 2009; Trivette, Dunst, Hamby, & O'Herin, 2009; Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009; Wei, Darling-Hammond, & Adamson, 2010; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Of note, professional development is most effective when it is focused on curricular and instructional strategies that are needed to teach all students effectively. This includes helping participants identify a clear and direct link between their classroom work and their own professional learning. The learning experience should be sustained and intensive over time (i.e., 11 hours to 40 hours) and include follow-up sessions that explicitly connect initial and on-going training. Moreover, the learning experience should be designed to actively engage participants in activities that are meaningful for them and incorporate what is known about adults as learners (Knowles, Holton, & Swanson, 2011). Research has demonstrated that adults learn best when they understand why they need to know something, can connect new learning to and draw on their personal experiences, recognize a current need for the new learning, and can identify learning goals and objectives suited to their particular needs and learning style (Knowles et al., 2011). Structured learning opportunities such as action research, study groups, and other forms of collaborative inquiry have been shown to be effective ways to present professional development (Easton, 2008).

The study has several limitations including its design, the small sample size, the use of a researcher-

developed survey, and the fact that faculty self-selected to participate. While the survey provided clear profiles of faculty stages of concern and levels of use, additional research should be conducted to refine and validate the survey. A study that employs a mixed methods approach in which this survey and individual interviews or focus group discussions are employed would provide a much richer and more detailed picture. Other researchers could also incorporate the survey into professional development as a pre-post measure.

References

- Americans with Disabilities Act (ADA) of 1990. PL 105-220, 42 U.S.C. §12101 *et seq.*
- Anderson, S. (1997). Understanding teacher change: Revisiting the concerns based adoption model. *Curriculum Inquiry*, 27(3), 332-367.
- Assistive Technology Act of 1998. PL 105-394, 29 U.S.C. §2201 *et seq.*
- Banfield-Hardawy, S. (2010). Universal instructional design: Tools for creating an inclusive educational experience. *The Vermont Connection*, 31, 21-28. Retrieved from <http://www.uvm.edu/~vtconn>
- Burgstahler, S. E. (2008). Universal design in higher education. In S. E. Burgstahler & R. C. Cory (Eds.). *Universal design in higher education: From principles to practice* (pp. 23-44). Cambridge, MA: Harvard Education Press.
- Center for Applied Technology. (2011). *Universal Design for Learning guidelines version 2.0*. Wakefield, MA: Author. Retrieved from <http://www.cast.org/>
- Chodock, T., & Dolinger, E. (2009). Applying universal design to information literacy: Teaching students who learn differently at Landmark College. *Reference & User Services Quarterly*, 49(1), 24-32.
- Dobbs, R. L. (2004). Impact of training on faculty and administrators in an interactive television environment. *Quarterly Review Of Distance Education*, 5(3), 183-194.
- Easton, L. B. (Ed.) (2008). *Powerful designs for professional learning* (2nd ed.). Oxford, OH: National Staff Development Council.
- Evans, C., Williams, J. B., King, L., & Metcalf, D. (2010). Modeling, guided instruction, and application of UDL in a rural special education teacher preparation program. *Rural Special Education Quarterly*, 29(4), 41-48.
- George, A. A., Hall, G. E., & Stiegelbauer, S. M. (2008). *Measuring implementation in schools: The stages of concern questionnaire*. Austin, TX: SEDL.
- Guskey, T., & Yoon, K. S. (2009). What works in professional development? *Kappa Phi Delta*, 90(7), 495-500.

- Hall, G. E., & Hord, S. M. (2006). *Implementing change: Patterns, principles, and potholes* (2nd ed.). Boston, MA: Pearson Education.
- Hall, G. E., & Hord, S. M. (2010). *Implementing change: Patterns, principles, and potholes* (3rd ed.). Boston, MA: Pearson Education.
- Hall, G. E., Dirksen, D. J., & George, A. A. (2008). *Measuring implementation in schools: Levels of use*. Austin, TX: SEDL.
- Higbee, J. L., & Goff, E. (Eds.). (2008). *Pedagogy and student service for institutional transformation: Implementing universal design in higher education*. Retrieved from <http://www.cehd.umn.edu/passit/docs/PASS-IT-Book.pdf>
- Higher Education Opportunity Act (HEOA) of 2008. PL 110-315, 20 U.S.C. §1001 *et seq.*
- Hord, S. M., Rutherford, W. L., Huling, L., & Hall, G. E. (2006). *Taking Charge of change*. Austin, TX: SEDL.
- Hord, S. M., Stiegelbauer, S. M., Hall, G. E., & George, A. A. (2008). *Measuring implementation in schools: Innovation configurations*. Austin, TX: SEDL.
- Individuals with Disabilities Education Improvement Act (IDEA) of 2004, PL 108-446, 20 U.S.C. §1401 *et seq.*
- Izzo, M. V., Murray, A., & Nova, J. (2008). The faculty perspective on universal design for learning. *Journal of Postsecondary Education and Disability*, 21(2), 60-72.
- Javeri, M., & Persichitte, K. (2007). Measuring technology integration practices of higher education faculty with an innovation component configuration map (ICCM). *International Journal of Technology in Teaching and Learning*, 3(1), 28-50.
- Knowles, M. S., Holton, E. F., & Swanson, R. A. (2011). *The adult learner: The definitive classic in adult education and human resource development* (7th ed.). Oxford, UK: Elsevier.
- Meyer, A., & Rose, D., (2000). Universal design for individual differences. *Educational Leadership*, 58(3), 39-43.
- Orr, A. C., & Hammig, S. B. (2009). Inclusive postsecondary strategies for teaching students with learning disabilities: A review of the literature. *Learning Disability Quarterly*, 32(3) 181-196.
- Pedron, N. A., & Evans, S. B. (1990). Modifying classroom teachers' acceptance of the consulting teacher model. *Journal of Educational and Psychological Consultation*, 1(2), 189-200.
- Rose, D. (2001). Universal design for learning: Deriving guiding principles from networks that learn. *Journal of Special Education Technology*, 16(2), 66-67.
- Rose, D. H., Harbour, W. S., Johnston, C. S., Daley, S. G., & Abarbanell, L. (2006). Universal design for learning in postsecondary education: Reflections on principles and their application. *Journal of Postsecondary Education and Disability*, 19(2), 135-151. Retrieved from <http://www.ahead.org/publications/jped>
- Schelly, C. L., Davies, P. L., & Spooner, C. L. (2011). Student perceptions of faculty implementation of universal design for learning. *Journal of Postsecondary Education and Disability*, 24(1), 17- 30.
- Scott, S. S., McGuire, J. M., & Foley, T. E. (2003). Universal design for instruction: A framework for anticipating and responding to disability and other diverse learning needs in the college classroom. *Equity & Excellence in Education*, 36(1), 40-49. doi: 10.1080/10665680390210148
- Silver, P., Bourke, A., & Strehorn, K. C. (1998). Universal instructional design in higher education. *Equity & Excellence in Education*, 31(2), 47-51. doi: 10.1080/1066568980310206
- Silverstein, R. (2000). Emerging disability policy framework: A guidepost for analyzing public policy. *Iowa Law Review*, 85(5).
- Snyder, T. D., & Dillow, S. A. (2011). *Digest of education statistics 2010* (NCES 2011-015). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC. Retrieved from <http://nces.ed.gov/>
- Spooner, F., Baker, J. N., Harris, A. A., Ahlgrim-Delzell, L., & Browder, D. M. (2007). Effects of training in universal design for learning on lesson plan development. *Remedial and Special Education*, 28(2), 108-116.
- Stringer, E. T. (2007). *Action research* (2nd Ed.). Thousand Oaks, CA: Sage Publications.
- Stringer, E. T. (2008). *Action research in education* (2nd Ed.). Upper Saddle River, NJ: Pearson Education.
- Trivette, C. M., Dunst, C. J., Hamby, D. W., & O'Herin, C. E. (2009). Characteristics and consequences of adult learning methods and strategies. *Winterberry Research Syntheses*, 2(2), 1-33.
- U. S. Department of Education. (2010). *A blueprint for reform: The reauthorization of the elementary and secondary education act*. Retrieved from <http://www2.ed.gov/policy/elsec/leg/blueprint/>
- United States Government Accountability Office (U.S. GAO). (2009, October). *Higher education and disability* (GAO-10-33). Retrieved from <http://www.gao.gov/new.items/d1033.pdf>

- Van den Berg, R., Slegers, P., Geijsel, F., & Vandenberghe, R. (2000). Implementation of an innovation: Meeting the concerns of teachers. *Studies in Educational Evaluation, 26*, 331-350.
- Wade, S. E., Welch, M., & Jensen, J. B. (1994). Teacher receptivity to collaboration: Levels of interest, types of concern, and school characteristics as variables contributing to successful implementation. *Journal of Educational and Psychological Consultation, 5*(3), 177-209.
- Wei, R. C., Darling-Hammond, L., & Adamson, F. (2010). *Professional development in the United States: Trends and challenges*. Dallas, TX: National Staff Development Council. Retrieved from <http://www.learningforward.org/>
- Wei, R. C., Darling-Hammond, L., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad*. Dallas, TX: National Staff Development Council. Retrieved from <http://www.learningforward.org/>
- Wickersham, L. E., & McElhany, J. A. (2010). Bridging the divide: Reconciling administrator and faculty concerns regarding online education. *Quarterly Review of Distance Education, 11*(1), 1-12.
- Wilken, D. S. (2011). Campus climate and universal design for learning survey. Unpublished instrument.
- Yoon, K. S., Duncan, T., Lee, S. W.-Y., Scarloss, B., & Shapley, K. (2007). *Reviewing the evidence on how teacher professional development affects student achievement* (Issues & Answers Report, REL 2007–No. 033). Retrieved from <http://ies.ed.gov/ncee/edlabs>.

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