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Universal Design for Instruction: Understanding Faculty Practices and Needs

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Today's higher education student population is increasingly diverse along many dimensions including educational background, age, gender, culture, ability, disability, and primary language. Faculty members who are designing instructional experiences and supportive learning environments have an opportunity to enhance instructional accessibility by using Universal Design for Learning/Instruction (UDL/UDI) principles. Based on these principles, proactive strategies may be designed and implemented to ensure access to higher education experiences by college students both with and without disabilities. Applying UDL/UDI principles in college and university courses will not eliminate the need for specific accommodations for students with disabilities, but can support learning for *most* students and *minimize* the need for special accommodations (Center for Applied Special Technology [CAST], 2008; Scott, McGuire, & Shaw, 2001, 2003).

The purposes of this short report are to describe key principles of UDL and UDI and to describe the findings of a pilot survey study that focused on faculty members practices and needs in the areas of UDL/UDI. Limited previous research is available related to faculty perceptions of UDI/UDL in higher education settings. One exception is a study conducted by Vreeburg-Izzo, Murray, and Novak (2008). Vreeburg-Izzo et al. conducted a survey, coupled with follow-up focus groups, with faculty and graduate teaching assistants that examined the (a) climate of instructional settings for students with disabilities, and (b) perceived needs for professional development among faculty and administrators related to providing educational

access for all students. Of the 1,150 survey instruments distributed, 271 were completed and returned. Results from the survey indicated that participants were primarily interested in training on UDL but also expressed interested in training on Web accessibility and distance education. Subsequent focus groups revealed that faculty (a) often felt uncertain about meeting the needs of diverse students in the classroom; (b) employed several strategies to enhance teaching and learning, but did not connect this to UDL; and (c) desired both training and technical assistance to help promote educational access for all students.

Key Principles of UDL

UDL is an extension of an architectural movement known as *universal design* (UD). Originally described by Ron Mace at North Carolina State University (Rose & Meyer, 2002), the idea behind UD in architecture is to create structures that are designed and constructed to accommodate a wide range of users—both with and without disabilities—thereby minimizing the need for later changes in the design. UDL extends UD in two key ways: it (a) applies the idea of built-in flexibility to the educational curriculum; and (b) extends UD by supporting *both* improved access to information within classrooms *and* improved access to learning (CAST, 2008; Pisha & Coyne, 2001; Sabia, 2008).

The UDL framework includes instructional approaches that provide students with choices and alternatives in the materials, content, tools, contexts, and supports they use. In addition to challenging teachers to be more flexible, UDL provides guidelines for creating flexibility that is both systematic and effective (CAST, 2008; Rose & Meyer, 2002). Three primary principles guide UDL, which provide multiple (a) means of representation, (b) means of action and expression, and (c) means of engagement (CAST).

Key Principles of UDI

Although the principles of UDL hold potential to enhance the effectiveness of educational strategies and settings, it is important to consider the unique context of higher education when applying UDL to postsecondary education. Given the increasing diversity seen in higher education settings, there is a need to increase both diversity of instruction and curricula used with all students. Building upon and extending the principles of UDL, Scott et al. (2001) developed a new set of UD principles for postsecondary education, i.e., UDI. UDI principles (see Table 1) are written in a way that could support faculty in integrating instructional features that could meet the needs of diverse learners. In addition, UDI principles could also help faculty to self-reflect on their own instruction and make adjustments as needed (Scott et al., 2003).

A UDL/UDI Pilot Study with Faculty Members

To explore how faculty members in the Department of Special Education at Illinois State University use UDL/UDI principles and identify their needs in this area, a pilot survey instrument was developed and placed in the mailbox of 27 instructors (the survey is available by request from the authors). The survey instrument included open-ended and closed-ended questions across four areas: (a) general information related to instructors' use of or inclusion of ideas from UDL/UDI (e.g., syllabus components, communication with students, learning community activities); (b) information related to whether and how instructors use multiple means of representation (i.e., strategies and/or tools use by faculty and students to represent the

knowledge/content deemed important for a course); (c) information related to instructors' use of multiple means of engagement (i.e., multiple ways of engaging students in the learning process); and (d) information related to instructors' use of multiple means of expression (i.e., multiple ways of engaging students in the learning process).

TABLE 1. PRINCIPLES AND INSTRUCTIONAL PURPOSES OF UDI

UDI Principle	Instructional Purpose
Equitable use	Designed to provide the same means of use for all students (i.e., identical whenever possible, equivalent when not).
Flexibility in use	Designed to accommodate a wide range of individuals by providing choice in methods of use.
Simple and intuitive	Designed in a straightforward and predictable manner (with unnecessary complexity eliminated), regardless of the student's experience, knowledge, language skills, or current concentration level.
Perceptible information	Designed so that necessary information is communicated effectively to the student, regardless of ambient conditions or the student's sensory abilities.
Tolerance for error	Anticipates variation in individual student learning pace and prerequisite skills.
Low physical effort	Designed to minimize nonessential physical effort in order to allow maximum attention to learning.
Size and space for approach and use	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.
A community of learners	Promotes interaction and communication among students and between students and faculty.
Instructional climate	Designed to be welcoming and inclusive, with high expectations espoused for all students.

Source: Adapted and presented, with permission, from Scott, S. S., McGuire, J. M., & Shaw, S. F. (2001). *Principles of universal design for instruction*. Storrs, CT: University of Connecticut Center on Postsecondary Education and Disability.

Fifteen faculty members completed and returned the anonymous survey instrument (55% response rate). Faculty members who completed the survey had between one and 25 years of experience in higher education. All 15 participants reported that their syllabi included statements related to the Office of Disability Concerns, course requirements, and expectations. Faculty members (93%) reported that due dates were also integrated into course syllabi. Faculty indicated that they used a variety of ways and tools to communicate with students (e.g., e-mail, phone, office hours, Web site, social network, video phone) and encouraged the development of a 'learning community' within their respective classes using a cadre of activities (e.g., setting community goals, celebrating achievement, encouraging group work).

When asked about using multiple means of representation, faculty members reported using visual (100%), auditory (100%), verbal (100%), and graphic (67%) modes of representation. They indicated that they provided accessible course content and materials through the use of accessible Web sites (53%), captioned videos (47%), and other information and communication technologies. Faculty members stated that when they used multiple means of representation, they believed students were more engaged and their levels of critical thinking increased. As one faculty member

noted, when using different modes of representation "students see the content as 'real' and are more likely to learn and generalize." In addition, faculty reported that using multiple means of representation allowed them to address varying levels of understanding among students, resulting in what appeared to be greater comprehension of concepts discussed in the curricula.

Faculty used different methods to engage students including lectures (100%), demonstrations (80%), small group activities (87%), and classroom and online discussions (100%). Most of the faculty members believe that the use of different methods for engagement resulted in heightened student involvement and participation in course activities.

The final part of the survey focused on the third key principle of UDL/UDI—multiple means of expression. Faculty described different methods they allowed students to use to demonstrate their knowledge including written reports (93%), oral presentations (80%), discussions (73%), and videos (47%). Faculty also stated that they encouraged the use of various technologies to ensure that students could accurately express what they know. According to participating faculty members, the use of multiple means of expression generated a variety of viewpoints; encouraged diversity, flexibility and tolerance; and allowed them to meet the individual learning needs of students. One faculty member reported that "students' engagement and focus is always enhanced when using multiple, varied means of instruction and demonstration of knowledge. The variety allows different students to shine."

Faculty members were also asked about the challenges of using UDL/UDI principles. The most frequent challenges included limited time (93%) and knowledge of specific strategies (53%), and need for assistive technology (tools and support; 33%) that can enhance teaching. Faculty members identified several activities that could support teaching using UDL/UDI principles: (a) self- learned activities, such as online modules (67%) and resource books (47%); (b) group activities, such as small interest groups discussions (53%); and (c) direct teaching activities, including lectures and demonstrations (47%).

Summary

The result of this pilot study revealed the potential benefits of the use of UDL/UDI principles and guidelines for both faculty members and students in a higher education setting. Faculty members commented on the benefits of using UDL/UDI strategies and reported using a variety of strategies related to multiple means of representation, engagement, and expression. Faculty members also reported particular needs to learn about additional strategies and receive support in the design and delivery of instruction using varying technology tools. These initial findings support the need for additional research regarding UDL/UDI needs and practices of higher education faculty members, while also providing direction for specific professional development activities that could benefit faculty members. Specifically, as this was a pilot study, large-scale research needs to be conducted to both identify current faculty instructional and assessment practices *and* the degree to which these practices adhere to principles of UDI/UDL. In addition, while the theory of UDI/UDL generally seems to be viewed as important for practice (Vreeburg-Izzo et al., 2008) the efficacy of implementing UDI/UDL principles in higher education learning environments has yet to be validated. Finally, further research is needed to identify efficient means for faculty to develop knowledge and skills related to implementing UDI/UDL in the classroom.

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