

Faculty Development and Universal Instructional Design

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Centers for teaching and instructional development offer consultation services and resources materials for faculty members and graduate teaching assistants designed to promote excellence in undergraduate teaching. This article considers how such efforts may better address the needs of students with disabilities enrolled in postsecondary education by exploring the intersections of instructional development models.

Among the many challenges confronting higher education institutions today are the increased demands on instructors (e.g., increases in class sizes, teaching loads, and student expectations) and institutional infrastructures (e.g., increased competition for funds, and fewer employees to share workloads). Undergraduate student populations are increasingly diverse, bringing with them a range of identities, including social and cultural diversity (Anderson & Adams, 1992).

Beyond these issues of “bricks and mortar,” institutions are faced with a scope of changes in social values that may best be understood at a cultural level (Aune, 1996; Silver, Bourke, & Strehorn, 1998). Astin (1993) suggests that any effort to change American higher education must consider the role of values:

Values are fundamental to just about everything we do in undergraduate education: whom we admit, and on what basis; *what* we teach them and *how* we teach it; what *rules* and *requirements* will govern out students’ conduct; how to *test* and *certify* our students; *whom* to hire, and the *criteria* for hiring, tenuring, and promoting them; the manner in which we treat each other as professional colleagues; the *topics* we choose from our research and scholarship; and how we faculty use our discretionary time (p. 435).

One example of a recent change in social values in higher education is that the principles of the Universal Design movement in architecture have been applied to classroom teaching and learning environments in order to foster equitable access for students with disabilities (Silver, Bourke, & Strehorn, 1998). This model, known as Universal Instructional Design (UID), aims to shift perspective from a basic effort to match minimum standards (con-

forming to the “letter of the law”) to real inclusion and accessibility as the benchmark for colleges and universities in providing equal access to teaching and learning environments on campus (Silver et al., 1998).

Some progress has been made in identifying, articulating, and offering alternatives to traditional attitudes and approaches to teaching in American higher education (Adams, Bell, & Griffin, 1997). McKeachie (2002) describes the current view as a shift that now holds good teaching as “the interaction of good instructional practices with students’ strategic use of learning strategies and skills, motivational processes and self-regulation” (p. 270). However, in light of the need for increased sensitivity to the diversity of learners, much remains undone. By understanding and including the needs of students with disabilities in the broad context of diversity and teaching and learning issues, teaching and learning centers are poised to make significant contributions to individual, institutional, and cultural changes in the context of higher education.

Faculty members have traditionally received preparation and mentoring in support of scholarly goals (such as research and publications) from within their discipline. Although graduate programs in the United States’ higher education programs have begun to address teaching development issues more regularly, many new faculty members enter into their teaching responsibilities underprepared (Ouellett & Sorcinelli, 1998; Reis, 1997). In particular, most graduate teaching assistants, instructors, and faculty members have limited experience meeting the needs of students with disabilities successfully, and have rarely undergone any formal training about creating inclusive classrooms (Burgstahler, Duclos, & Turcotte, 1999).

Over the past 60 years, research about instructional and faculty development has helped improve classroom

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performance of both teachers and students (Sorcinelli, 1991). The definition of successful teaching has traditionally focused on attributes assigned to instructors, such as subject area expertise or oratorical skills. More recently, the focus has shifted to student learning. McKeachie (2002) describes faculty developers and instructional consultants as “those faculty or staff members who are assigned the task of improving instruction” (p. 325). To increase the success of instructors, many higher education institutions have created campus-wide centers where faculty developers can work with instructors to gather feedback from students, identify resources, and offer suggested practices to meet the changing demographics and different learning needs of students on campus. Models of effective teaching help faculty members incorporate into their practices what is known from research and practice about what helps students learn. There have been dual positive outcomes of such efforts: students receive better instruction and faculty members are clearer about how best to improve their chances of success as teachers.

Similarly, such models have helped faculty and instructional developers to support instructors to understand and apply learning theories and best practices in pedagogy, and in working with assessment and evaluation strategies to deliver the best teaching possible in undergraduate education. This is further evidenced in the increasing popularity of such teaching methods as the case study, role-plays, experiential exercises, discussion, collaborative learning strategies, and problem-based learning (Grasha, 1996; McKeachie, 2002).

Chickering and Gamson (1987) suggest a practice-based model, *Seven Principles of Good Practice in Undergraduate Education*, which informs the approach of many faculty developers to teaching enhancement (see Appendix A). Although these seven principles are necessarily broad, they help instructors identify useful points of entry in assessing their strengths and challenges as instructors.

Faculty developers and centers for teaching have been on the vanguard of helping college and university faculty members incorporate innovative teaching practices that reflect the changing demands on higher education, especially the expanding demographic profile of undergraduate students (e.g., gender, race, ethnicity, sexual orientation, age, social and economic class, and physical and learning abilities). These efforts have been fueled by persistent calls from instructors for assistance in effectively addressing the diverse needs of the broadening range of learners found in classrooms today (Cook & Sorcinelli, 1999; Kardia, 1998; Marchesani & Adams, 1992; Ouellett & Sorcinelli, 1995). Although colleges and universities may herald diversity and inclusion as cherished values, they have yet to make sufficient institutional progress toward the aspirational goal of access for all to excellence in teaching and learning. When teaching and learning cen-

ters and disability support services are better prepared to respond to the needs of diverse faculty, graduate, and undergraduate students, the more likely they will be true resources to instructors invested in teaching inclusively.

The good news is that many faculty members are genuine in their commitment to design their instruction in a universal way (Silver et al., 1998), and are aware of their need for more information and related campus resources to support the educational success of all students, including those with disabilities (Burgstahler et al., 1999). Universal Instructional Design provides a structure for faculty members to manifest such goals and values in their teaching.

UNIVERSAL INSTRUCTIONAL DESIGN

Universal Instructional Design (UID) is defined by the Council for Exceptional Children (1998) as the design of instructional materials and activities that allow learning goals to be achieved by individuals, despite wide differences in abilities. In other words, individuals should be able to see, hear, speak, read, write, understand English, attend, organize, engage, remember information, and move freely. Universal Instructional Design for learners is achieved by means of flexible curricular materials and activities that provide alternatives for students with disparities in abilities and backgrounds.

Universal Instructional Design offers a model for anticipating and addressing common obstacles to effective teaching and learning in the development of course preparation, thus saving instructors and students from needless conflicts. For example, if access issues are addressed in the design phase of building web-based resources for a course, no redevelopment is necessary when a student with disabilities enrolls in the class. In the same vein, providing students access to class notes and assignments on an accessible website eliminates the need for providing material in alternative formats on a per request basis. Clearly, models of teaching and learning in higher education settings would benefit from further incorporation of the principles of Universal Instructional Design. These efforts extend and enhance key priorities of both endeavors: greater access and success for all students and excellence in undergraduate education.

One example of this integration is the Fox and Johnson (2000) effort to combine Chickering and Gamson’s (1987) principles and North Carolina State University’s Center for Universal Design *Seven Principles for Universal Design* (Center for Universal Design, 1997). The common ground is each model’s aim to create a respectful climate, to provide alternatives for users, and to require some upfront planning (Fox & Johnson, 2000).

The information below is presented as a combination of models of best practices for teaching inclusively, concrete strategies proven effective in achieving the

overarching goals of access for students with disabilities, and questions guiding the ongoing development of inclusive teaching and learning environments. At an individual level, instructors can implement principles of UID through a framework that includes awareness of one's self as teacher, essential course components, innovative pedagogy, and assessment and evaluation.

TEACHER SELF-AWARENESS

Perhaps the first question to consider is, "Why is UID important to my success as a teacher?" Faculty members can benefit from incorporating UID principles because they will become more reflective practitioners, increase their efficiency in balancing the multiple demands of research, service, and teaching, and develop more effective instructional strategies for teaching inclusively.

As Parker Palmer (1998) points out in his book, *The Courage to Teach*, "We teach who we are" (p. 1). Teacher self-awareness begins with instructor self-reflection. In higher education settings, faculty members often teach in a manner that matches their own learning preference (often expressed as reflection through reading and writing) (Grasha, 1996). Many faculty members describe an ideal learning environment as one in which they receive a lot of information upfront, and have the opportunity to read and reflect upon that information, followed by an opportunity to apply and test out new ideas or skills. By contrast, undergraduates' commitment to learning is maintained by a preference for a more active, experiential learning mode. They tend to prefer topics that allow them to engage immediately (i.e., with a social context or with concrete content) and then comprehend how the material relates to their lives and experiences (Grasha, 1996). These inclinations are confirmed by an ongoing survey of learning style preferences of faculty and students (Fleming, 2001). Once they understand this invisible difference, instructors may be willing to vary their instructional methods to incorporate multiple ways of presenting information and engaging students.

Whether intentional or not, instructors' attitudes and expectations permeate the classroom and impact the success of students with disabilities (Burgstahler et al., 1999; Yucker, 1994). Therefore, it is essential that instructors take time to reflect on their experiences, perceptions, values, and beliefs about people with disabilities and to address their emotions as well as their ideas about working with students with disabilities. For example, faculty members' cultural preferences, values, and beliefs have been shown to have both intentional and unintentional effects (Marchesani & Adams, 1992; Weinstein & Obeir, 1992). By addressing these issues intentionally and consciously, less time is needed for unanticipated consequences (e.g., when the faculty member is not clear about exactly what students are to learn).

Boice (1992, 2000) identifies important attributes of junior faculty members who were eventually successful in tenure and promotion decisions and also report the highest degrees of satisfaction in their careers. In particular, he notes that these "quick starters" strive for a balanced, quality investment in the three aspects upon which faculty are evaluated: teaching, research, and service. Boice further notes that a common obstacle to this balance for junior faculty members is spending a disproportionate amount of time and effort preparing to teach. Therefore, by understanding and addressing what matters most in effective teaching, instructors can be more productive and make more efficient use of their time.

Additionally, United States society continue to perpetuate stereotypes and assumptions about people with disabilities. The opportunity to gather accurate information or to develop a meaningful understanding of the experiences a person with disabilities is likely to have on campus requires faculty members to reach out and pursue new learning opportunities.

While this process may cause discomfort, it is essential to becoming the kind of instructor that reaches all students. Working on these issues is an affective as well as cognitive process (Marchesani & Adams, 1992; Weinstein & Obeir, 1992). Some common concerns of faculty members (e.g., that accommodations need to be elaborate or will undercut the academic rigor expected of all students) are best addressed in dialogue with students with disabilities, with on-campus service providers, and with experienced colleagues (Ouellett, 2000). Some questions for self-reflection are:

- Are you generally familiar with the services provided by the Disability Services Office on campus?
- Do you understand the process by which a student is expected to provide you with documentation of their disability and the appropriate accommodations?
- Do you have strategies to approach a student with a disability and to engage her or him respectfully about learning goals and needs in the context of this course?

The following sections address teaching development strategies that are useful to instructors who are interested in answering the above reflection questions.

KNOWING OUR STUDENTS

Universal Instructional Design encourages instructors to construct courses that take into consideration the wide variety of characteristics of students, including disabilities (Burgstahler, 2003). One example has been the efforts to define "diversity" broadly to include the multiple aspects of one's social identity. For example, these aspects may include: race/ethnicity, gender, religion, sexual orientation, age, physical and academic abilities, and economic class standing (Adams et al., 1997; Marchesani & Adams, 1992; Ouellett & Sorcinelli, 1995).

Knowledge about students informs teaching practices by helping the instructor to gauge overall academic readiness, to anticipate questions and likely points of confusion, and to plan for constructive student-to-student learning opportunities. Equally importantly, such knowledge helps instructors understand students' individual personalities, learning styles, and interests, which helps instructors determine and tailor appropriate supports during the instructional planning process (Marchesani & Adams, 1992). Like Chickering and Gamson (1987), I recommend getting to know students early on in the semester, and to communicate an interest in their success. Such contacts help the instructor understand the strengths, challenges and learning goals that students bring to the course.

Instructors often labor under the assumption that accommodating students with disabilities is likely to be difficult or overly burdensome. Burgstahler, Duclos, and Turcotte (1999) identified three key issues for students with disabilities: they want to be greeted with respectful attitudes, they prize the protection of confidentiality, and they appreciate instructor flexibility. The most commonly requested accommodations are relatively easy to provide: extended time on exams and assignments, alternative testing formats, and a quiet space for testing.

Instructors are increasingly aware of the natural interplay of authority and power in the discourses of teaching and learning, and as such acknowledge that teaching and learning is inherently a social process (McKeachie, 2002). Students and teachers can simultaneously teach and learn from each other. Until recently, success in higher education has largely been predicated on one's ability to compete individually and to demonstrate excellence using oral or written modes of expression in an argumentation style. Questioning of such traditional values and beliefs has led, for example, to the contestation of the presumed neutrality or impartiality of the act of teaching and the emergence of a broader, multi-strand definition of excellence (Anderson & Adams, 1992).

Another example of such change may be seen in how the traditional definition of fairness (exactly the same treatment) has now been expanded into a social justice paradigm (equitable opportunity for success). Today, faculty members better understand that in the context of teaching and learning "exactly equal" may fall far short of "fair." Teachers recognize that not all learning is exactly the same (Adams et al., 1997; Anderson & Adams, 1992; Grasha, 1996).

Part of getting to know students is to understand better the perspectives, attitudes, and prior experiences that students bring with them to the learning endeavor. The most powerful learning occurs when students are appropriately engaged—emotionally, kinesthetically, and cognitively. Therefore, some understanding of students' past educational successes and failures, learning style preferences, and motivations for taking the course can all

help an instructor engage the student more successfully (Adams et al., 1997; Ouellett & Sorcinelli, 1995; Sorcinelli, 1991).

Using low-risk strategies, teachers can gather information from students about their learning goals and motivations for taking courses, and their prior learning and academic readiness (e.g., what pre-requisites they have taken). Perhaps one of the most commonly used techniques for inviting students to communicate about their learning is a Student Background Inventory that asks students to describe their interests, prior experiences, and motivations for taking a course (Angelo & Cross, 1993).

Open-ended questions that invite students to offer information about their specific learning needs may be particularly useful. For example, ask students, "What would you like me to know about you as a learner to help make this course a successful experience?" Additionally, it may be important to ask students about their feelings about and prior knowledge of the subject. A student may carry an emotional response to the core content (e.g., math anxiety or fear of public speaking) into the classroom that impedes his or her success. Lastly, faculty should review their syllabi to be certain to include an appropriate statement regarding disability issues. This statement should be highlighted in class, and faculty should make themselves available to talk with students privately about disability issues.

To remain regularly available to students and also attend to the myriad of other responsibilities, faculty members are finding it helpful to view "office hours" with more flexibility than simply being available for set hours in campus offices. Some faculty members are experimenting with supplementing face-to-face office hours with e-mail, phone, or real-time online chat rooms. Many instructors suggest establishing clear guidelines and expectations for the nature of regular contact expected (Ouellett, 2000). One such example is how instructors anticipate responding to e-mail. Some students may assume that e-mail sent to an instructor will receive an immediate response. The best strategy is to establish ground rules early on and stick with them (e.g., I will/will not answer emails over the weekend).

ESSENTIAL COURSE COMPONENTS

The essential components of a course are the areas of the course or curriculum in which all students are expected to develop skills or competencies and to demonstrate a certain level of proficiency (Pliner, 2001). Anderson (1999) defines essential components of a course as the outcomes that all students must demonstrate (with or without using accommodations). The outcomes include skills, knowledge, and attitudes, and are to be evaluated in a non-discriminatory manner. There are four key arenas: what you want students to know

(core content, principles, concepts); what you want students to be able to do (academic skills); what you want students to value or appreciate (values or attitudes); and the level of proficiency you will expect students to demonstrate at the completion of this course. Identifying of the essential components of a course benefits all students by articulating a non-discriminatory baseline of course content, methods, skills, abilities, and expectations that are required of all students (Columbia University, 2000).

Essential components are determined using information at the course, college, and university levels (e.g., catalog descriptions and the syllabus). Essential components may be identified from departmental standards and requirements such as expectations for disciplinary majors or minors. At the college and university levels they may be determined by general education and other requirements for graduation, certification, or licensing. By carefully and clearly articulating the essential components, an instructor identifies the essence of the course and the baseline expectations required of all students. Additionally, a faculty member can be more confident in understanding how an individual course fits into the curriculum of the disciplinary major/minor, the program or department, and the college or university's curriculum.

The principles of Universal Instructional Design never ask the faculty member to water down the rigor, to lower standards, or to narrow the range of the curriculum. Identification of essential learning outcomes allows the instructor to be confident that the highest standards of academic rigor are maintained. Benefits for students include a more responsive classroom environment, greater clarity of instructors' expectations, an increased focus on the connection between learning and course content, the ability to become a more self-reflective learner, and a better understanding of one's strengths and weaknesses as a student (Stassen, Doherty, & Poe, 2001). In the same vein, instructors benefit from engaging students in an ongoing dialogue about their learning experiences.

Appendix B, Questions to Guide Universal Instructional Design, offers instructors a set of questions that may help further guide the course development process. In the following sections, I identify other important attributes of building an inclusive course using the UID model including pedagogy of UID, assessment and evaluation, and institutional structures that support UID.

PEDAGOGY OF UID

The Center for Applied Special Technology (CAST, 2004) offers Universal Design for Learning (UDL) as a new paradigm, which posits that "a curriculum should include alternatives to make it accessible and appropriate for individuals with different backgrounds, learning styles, abilities, and disabilities in widely varied

learning contexts" (§ 3). UDL offers an interdisciplinary model of course development that focuses on three elements: flexible means of representation, expression, and engagement.

Providing flexible means of representation addresses potential perceptual or cognitive barriers to learning (CAST, 2004). While no single method of presentation will provide equal access for all learners, multiple representations allow students to utilize their preferred modes. For example, combinations of text, audio, and graphical images address a range of perceptual barriers. Alternatives that reduce cognitive barriers might include offering summaries of key concepts ("big ideas") for students who are easily overwhelmed by complex content. For students who lack the background knowledge necessary to complete an assignment, instructors will need to construct assessments and respond with appropriate pedagogical strategies.

Online instruction and assessment offers instructors additional flexibility for creating multiple points of access for students such as peer editing, anytime/anywhere access to course materials, easily posted directions for assignments, and information about evaluation, and grading processes.

Consider the innovative and inclusive efforts of a professor of Art History at a large, New England public research university, who offers a model of the effective use of web-enhanced teaching. By incorporating computer and web-based teaching methods into her course, she offers students multi-modal (flexible visual, aural, and print) access to the core content of the course. Students explore the history of art, architecture, and related concepts through interactive exercises embedded in the online homework system. To illustrate, students are expected to learn key architectural terms and attributes of ancient Greek temples. To facilitate this, the professor has developed an interactive computer-based exercise where students actually "build" temples from a set of components that differ according to the style (i.e., Ionic or Doric) to which each belongs. Students first choose what style of temple they want to build and then assemble it piece by piece (foundation, columns, cornices, etc.). If the student makes a mistake during "construction" and begins to mix stylistic elements, the program flashes lightning bolts and the message, "Sorry, the Gods don't like when you combine styles." When the design is complete, a three-dimensional model of the temple appears. If all is correct, the temple stands. This exercise is an excellent example of offering students multiple modes of instruction to achieve the essential goals of the module and to create an interactive, self-paced memory exercise.

Web-enhanced instruction can provide students with other important learning supports, such as archives of lecture notes, or downloadable Power Point slides of key themes, models, or illustrations of lectures. Such resources benefit all students, but may be particularly

helpful to students who find it difficult to determine what key points to underscore or for those who face difficulty writing notes and attending to lectures simultaneously. Many instructors, especially those within large lecture settings, find it more efficient to be able to refer students to the website for basic resources (e.g., extra copies of the course syllabus, directions for assignments, due dates, and reading lists and assignments). Additionally, by posting the syllabus, important messages, and other course expectations in a central place, students begin to know where to find accurate, timely course information. Instructors can then reiterate important messages orally before or after lectures or in discussion sections.

Some methods of expression may create barriers for students due to physical, sensory, emotional, or cognitive differences. These barriers can be addressed by offering students a range of methods of expression including combinations of writing, speaking, and drawing. In addressing barriers to cognitive expression, some students may require explicitly stated, concrete descriptions of each step for completing an assignment. Another strategy for addressing barriers to cognitive expression is scaffolding, which provides temporary support for learning that is gradually reduced as students develop new skills. Strategies may include faculty-student conferences, quizzes and tests delivered by interview questions, or the option to demonstrate knowledge through presenting a portfolio.

For learning environments to be truly accessible for all, it is important to provide learners with a range of options that consciously promote engagement, interest, and motivation. While maintaining a curricular focus on key concepts, offering learners the opportunity to engage course content in a range of formats and experiences acknowledges and addresses variations in learners' skills, preferences, and interests. Strategies may include the use of journals, videotapes and other visual representations, discussions, oral presentations, and storytelling.

For college and university instructors, UID principles can apply to any teaching and learning environment, including but not limited to lecture settings, discussions, labs, or web-based instruction. They give each student meaningful access to the curriculum by assuring access to the environment as well as providing multiple means of representation, expression, and engagement. Additionally, the CAST website (www.cast.org) lists concrete examples of basic teaching methods easily incorporated by most teachers that employ principles of UID.

Higher education institutions are responding to the demands of increased costs of operation and increased student enrollments by offering undergraduate courses as large lectures. Therefore, instructors will continue to be asked to offer course content in the context of the traditional lecture format. Suggestions for making lectures more universally accessible include the following ideas:

- Before the lecture, write key terms, concepts, and ideas on the board.
- Prepare a handout that outlines key terms, concepts, and ideas. It is especially important to include technical language or disciplinary jargon that may be new for students.
- Give students two or three questions that they should be able to answer by the end of each lecture.
- Pace the delivery of the lecture by beginning with a brief review of the most important components of the previous lecture.
- Use visual aids (overheads, diagrams, charts, or graphs) to underscore key points and main ideas.
- Face the class and speak distinctly and at a relaxed pace to facilitate note-taking and processing.

At the conclusion of the lecture, leave time to summarize the most important points covered and answer questions.

Employing universal design principles in instruction does not eliminate the need for specific accommodations for students with disabilities. (For example, a sign language interpreter may be provided for a student who is deaf.) However, applying universal design concepts in planning assures full access to the content for most students and will minimize the need for special accommodations. Even with the most effective and comprehensive implementation of the principles of UID, individual accommodations will continue to constitute good teaching practice. Although there is much that can be learned about commonly requested accommodations, the best source of information related to the limitations imposed by a specific disability and about accommodations that have been effective in the past, is the individual student (Burgstahler & Jirikowic, 2002).

ASSESSMENT AND EVALUATION

In another example of the close fit between the principles of UID and other models of teaching effectiveness, there is increasing understanding of the efficacy of helping instructors build methods for assessment and evaluation of student learning into the course design. The key task in evaluation is to be clear about the essential components of the course and to consider how students demonstrate mastery of them for the purposes of assigning grades.

Stassen, Doherty, and Poe (2001) suggest that assessment strategies are teaching tools that can facilitate student learning by helping the instructor to clarify teaching goals, provide students a better understanding of methods of evaluation, provide opportunities for regular communication about student progress, and actively engage students in their own learning. In a framework that integrates the goals of UID, Stassen, Doherty, and Poe define assessment as "the systematic collection and analysis

of information to improve student learning," and "a vehicle for making the learning process more effective by consistently linking essential course components, assignments, and grading practices to intended learning goals" (pp. 5–6).

Walvoord and Anderson (1998) adapted the model of Primary Trait Analysis (PTA) to help instructors combine traditional grading practices with classroom-based assessment. First, the instructor identifies the most important learning outcome goals (essential components) of the course. Next, the specific goals and objectives for each assignment, which are directly linked to course outcomes, are identified. Finally, the instructor describes the indicators or benchmarks for varying levels of achievement (i.e., excellent to poor). By constructing such rubrics and distributing the assessment grid to students at the same time as the directions for the assignment, the instructor makes transparent the goals of the assignment and the intended methods of assessment.

Faculty members may already incorporate a variety of assessment and evaluation tools, but may not articulate clearly to students why a particular behavior or skill is essential. For example, many faculty members identify attendance as essential, but may not have a clearly articulated rationale for how this particular requirement reflects and builds upon an essential component of the course. UID guides the instructor to look for ways to use multiple, varied, and broadly accessible approaches to testing and other modes of assessing learning.

Angelo and Cross (1993) have refined the concept of Classroom Assessment Techniques (CATs) to help instructors regularly gather "formative" assessments of students' learning and their perceptions of what in the learning environment is working well. For example, they suggest the "Minute Paper" as an exercise for a formative assessment at the end of a class session. Students take a minute (or a few) to respond to a question designed to assess their understanding of one or two key concepts, or, to make a list of the most important points of the lecture. Variations of this exercise ask students to identify lingering questions, or to identify the "muddiest point" from the day's lecture. Responses can be anonymous, depending upon the goals of the instructor. At the beginning of the following class, students are given feedback on their answers, questions, or points of confusion. Few other strategies are as efficient for determining whether or not students are "getting it." In the same way that students may benefit from assessment of their learning at specific points in time, instructors can benefit from developmental feedback on students' perceptions of the course (Angelo & Cross, 1993).

Formative assessment techniques benefit students and faculty members alike by allowing each to reflect upon what is going well and what could be improved in the teaching and learning environment. By gathering feedback and taking the time to reflect on the process

during the middle of the semester, both instructors and students are able to reconsider strategies and priorities before they receive their end-of-semester course evaluations or grades. To close this gap, faculty members need to seek out formative feedback from all students. It can be especially important to gather feedback from individuals with disabilities, since it may be less obvious to faculty members whether the needs of these students are being met.

UID encourages instructors to take expectations for assignments out of the intuitive realm and make public the expectations for performance and demonstration of progress. This is done by providing clear expectations and feedback and by offering learners comprehensive instructions for course requirements. Examples include explicit instructions about assignment due dates, giving grade percentages, offering links to appropriate websites, providing examples of "best answers" from previous students, making suggestions of strategies for completing long term assignments, holding an online forum for student discussion, providing information on campus resources for support; and providing regular office hours.

Additionally, UID encourages teachers to offer instructions and other important information in multiple formats (on the web in digitized formats, orally, through graphics, and in traditional text formats). All students benefit from clarity in instructions (such as how to write a lab report), examples of excellence, regular feedback on their progress, and explanations that clarify how lab or other experiential activities integrate with content covered in lectures and the course's key learning outcome goals.

If the essential aspects of a course include completion of reading assignments, assigned tasks, or material covered during lectures, then an instructor may be able to provide a variety of flexible alternatives for students to meet these expectations. However, for courses such as discussion-based sections, it may be that important content areas are accessible only through particular modes such as attendance and participation.

In addition to considering the steps that individual instructors may take to implement the principles of Universal Instructional Design, it is important to consider the role of institutional change efforts. The next section addresses these efforts.

INSTITUTIONAL STRUCTURES THAT SUPPORT UID

Good practice in multicultural organization development, as applied to higher education, advocates systemic assessment and intervention for successful institutional change, as well as services and supports for individuals (Chesler, 1998; Jackson & Hardiman, 1994). Taking such

an approach also addresses the essential role that institutional and cultural values, beliefs, and dynamics play in systemic injustices that far outweigh individual merits. A systemic approach also begins to undo behaviors that stem from social values and beliefs, such as stereotypes of students with disabilities as less academically able, or of accommodations as diminishment of academic rigor. Such beliefs recall individualistic, competitive models of "sink or swim" success with the accompanying beliefs that instructional challenges are the students' problem, rather than a problem with instructional design, delivery, or evaluation.

Faculty and instructional development professionals have important contributions to make in the promotion of individual and institutional practices that support effective and inclusive teaching and learning (Chism, 1998; Cook & Sorcinelli, 1999; Lieberman & Guskin, 2003). The principles of Universal Instructional Design offer a useful model for innovations in how instructors conceptualize and develop courses. UID acts as a complement to other innovative, learner-centered approaches to university and college instruction, including cooperative and collaborative learning designs, computer-assisted teaching, and the strong interest in learning outcomes assessment in higher education environments.

Faculty and instructional developers are often charged with conceiving and implementing instructional development opportunities for faculty and graduate teaching assistants campus-wide. Therefore, faculty developers have particularly important roles to play in the improvement of higher education outcomes for students with disabilities, and are beginning to respond to this charge.

Burgstahler, Duclos, and Turcotte (1999) report two faculty priorities for additional training related to creating accessible classrooms: information about how to provide specific accommodations and help in unknotting the perception of ethical questions about maintaining fairness. Nelson, Dodd, and Smith (1990) surveyed faculty across disciplines to ascertain supports and constraints in faculty willingness to accommodate students with learning disabilities; they found that the top concern of instructors was maintaining academic integrity. Most faculty members share similar concerns and would benefit from such opportunities as well.

One example of this response is the work of the late Patricia Silver at the University of Massachusetts Amherst. Dr. Silver created the Peer Mentoring Network, a program for faculty members designed to bring instructors together to share information, explore specific strategies for UID, and to support individual instructors' efforts to transform their courses (Silver et al., 1998). Silver and her colleagues reported that participating faculty members valued high expectations for all students, wanted all of their students to succeed, and believed that the UID model would benefit all students. Faculty members

noted some barriers to UID: the difficulty of effecting change within a university setting, the practices of some of their colleagues in elitist gate-keeping, and a belief that some people simply do not belong in higher education. These faculty members suggested that they and their colleagues would benefit from institutional support and resources such as the development of campus-wide workshops, availability of materials offering sample strategies and syllabi, and a transformation in the university culture (Silver et al., 1998). In response to suggestions generated by the Peer Mentoring Network, the University of Massachusetts Amherst Center for Teaching published the faculty resource guide, "Disabilities Resources for Teaching Inclusively" (Ouellett, 2000).

Perhaps the premier example of a transformational approach to institutional change and inclusion of students with disabilities is the University of Washington, Seattle. Since 1992, the university has supported the initiative Disabilities, Opportunities, Internetworking, and Technology (DO IT). DO IT has worked to increase the success of individuals with disabilities in postsecondary education. The DO IT Prof project features efforts to help students and faculty members achieve greater success in including students with disabilities in academic programs. They support the Faculty Room (www.washington.edu/doi/Faculty/Resources), an online resource to help faculty and academic administrators better prepare to fully include students with disabilities on campus and to contribute to systemic change within postsecondary institutions across the nation (Burgstahler, 2002).

Recently, the University of Minnesota's General College and Disability Services partnered to create, with support from the U.S. Department of Education, a system-wide faculty training and resource project called the Curriculum Transformation and Disability project (CTAD). In the materials developed by CTAD, the notion of meaningful access is expanded beyond the generally acceptable definition of physical access to education to include three important domains of institution-wide development: program/policy environment, information environment, and attitudinal environment (Fox & Johnson, 2000).

A focus on inclusive teaching continues to be subversive in the context of traditional academic life in that such teaching endeavors may still run contrary to established expectations. Additionally, such innovations require instructors to practice publicly before achieving a degree of expertness, to engage in the implementation of ideas and models without being able to explicitly predict outcomes and, perhaps most challenging, it puts students on a more level playing field with instructors as co-creators of the teaching and learning environment.

Faculty and instructional developers and Centers for Teaching and Learning are invaluable allies to instructors concerned with doing their best in relation to students

with disabilities (Burgstahler & Jirikowic, 2002). They can communicate the best practices, offer resource materials, and provide linkages between faculty members, departments, and disability services on campus. Furthermore, these individuals are excellently prepared to provide instructors individual consultation, support, and help in gathering formative and summative course assessment feedback (Stassen, Doherty, & Poe, 2001). Additionally, faculty developers, Centers for Teaching and Learning, disability service providers, and instructional consultants can provide an essential link for many faculty and academic administrators who welcome the opportunity to improve their inclusive teaching, but lack sufficient information and resources to do this effectively and efficiently.

Finally, faculty development must contribute to the creation of a pipeline for staffing of teaching and learning centers by encouraging the recruitment and mentoring for faculty developers who are sensitive to a range of diversity issues, willing to incorporate new pedagogical models (such as Universal Instructional Design), and committed to further dialogue and investigation (Stanley, 2001).

NOTE

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Appendix A Seven Principles for Good Practice in Undergraduate Education (Chickering & Gamson, 1987)

1. Good practice encourages student-faculty contact.
2. Good practice encourages cooperation among students.
3. Good practice encourages active learning.
4. Good practice gives prompt feedback.
5. Good practice emphasizes time on task.
6. Good practice communicates high expectations.
7. Good practice respects diverse talents and ways of learning.

Appendix B Questions to Guide Universal Instructional Design

- What are students expected to know, do, or value at the completion of this course?
 - Are the methods of instruction negotiable?
 - What are the core outcome goals for all students?
 - How will class standards be communicated to students?
 - How will variable outcomes (excellent to poor) be assessed?
 - Are variable outcome measurements negotiable?
 - Are there alternative outcomes that could be offered to all students?
 - What information about learning goals or prior experiences do I gather from students at the beginning of the course, what feedback do I gather as the course progresses, and what evaluations do I collect at the end of the course?
 - How do I prepare students to meet the assignment expectations?
 - How do my strategies for assessment reflect key learning goals?
 - How do I factor in individual differences?
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