Working with Faculty Toward Universally Designed Instruction: The Process of Dynamic Course Design

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Abstract

Both learner-centered education (LCE) and universal design (UD) require an instructor to be constantly reflective and flexible. But although both focus on the needs of different types of learners, until now LCE has not explicitly included students with disabilities within the array of learners it seeks to serve. And the UD movement, while it begins with consideration of disability, does not yet provide specific processes for integrating UD principles into the design of instruction. This paper introduces one such process, dynamic course design, which can be used by disability service providers in working with instructors to develop more universally designed classes. The process is designed to help instructors systematically identify and examine their expectations for student learning in a course and to prompt them to design their course so as to make the learning in it accessible to a wide variety of students.

Public awareness of disability has begun to change in recent years. As a result of various types of activity at both the state and national levels, disability is beginning to be seen as one aspect of diversity. Yet on college and university campuses (as elsewhere), disability is still often treated as a "different" difference and separated from activities related to diversity. Thus, students with disabilities are usually served through a Disability Services Center by specialists who advise them and arrange the special accommodations they are entitled to by law. Instructors are asked to send over their course syllabus, readings, and tests to be administered in ways appropriate to their students with disabilities and without disrupting their plans for class. This practice of creating individualized "special accommodations" for students (or anyone) with disabilities is based on a medical model that puts disability in a negative light, as a deficit or something abnormal in the individual that should not be allowed to affect the "normal" working of the class.

Universal design (UD) shifts our focus from the person with a disability, the center of the medical model, to the environment within which she or he lives. In the broadest sense, UD is "the process of creating products (devices, environments, systems, and processes) which are usable by people with the widest possible range of abilities, operating within the widest possible range of situations (environments, conditions, and circumstances)" (TRACE R&D Center, 2003). The UD movement has emerged from a new understanding of disability as a social construct much like those that defined women and people of color in what we now recognize as unacceptably sexist and racist ways. In this new understanding of disability, society *creates* the negative sense of disability as deficit. Disability in and of itself is not a problem, but the environment in which we ask people with disabilities to function often is: We built campus buildings inaccessible to people unable to climb stairs and, although we built elevators, we used to put the control buttons at the right height for the "average" person.

The new conceptualization of disability suggests that solutions lie in our willingness and ability to change the environment to make it more inclusive: We now build new buildings with ramps or other means of entry that allow use by everyone (students using wheelchairs, parents with strollers, athletes on crutches, teachers pulling loaded carts), we mount elevator control panels at a lower height, and we label them in Braille. These changes help many different kinds of people make use of our built structures, not just people with disabilities, and no one is singled out. These kinds of changes are examples of UD, as opposed to the special accommodations of the medical model.

Making a campus physical plant accessible is only half the battle, however. The concept of UD must be applied far beyond the built environment if we are to bring fundamental change to education. The question for anyone working in education is how we can put UD into practice in teaching and learning. A classroom full of students presents an instructor with much the same challenge as a physical environment does the architect when she or he contemplates the possible users of a building:

- *The architect might ask*, How can I effectively and creatively fulfill the requirements of the job with a design that is inclusive of the widest possible range of people and that does not single out individual users?
- *The instructor might ask*, How can I effectively and creatively design and teach this course in multiple ways that make the learning in it accessible to the widest possible range of the learners in the class without compromising the essential elements of the course and without singling out individual learners?
- *The disability services professional might ask*, How can I help faculty members buy into the need to design their courses in ways that make the learning in it accessible to the widest possible range of learners in the class without singling out individual learners for "special" or different treatment?

Combining our advocacy for UD with the current administrative interest at many colleges and universities in promoting learner-centered education gives us a highly strategic opening for working with faculty toward more universally designed instruction.

Learner-Centered Education and Universal Design

Student learning is the main concern of the learner-centered education (LCE) movement that is sweeping American colleges and universities. A focus on learning may seem self-evident in an educational setting—learning is what school is all about, isn't it? In fact, *teaching*, not learning, has traditionally been the focus of faculty and administrative attention at the postsecondary level. According to the traditional model of teaching-and-learning, if faculty are well prepared, organized, on time, and enthusiastic in the classroom, if they listen and respond respectfully to students and are available outside the classroom, students will learn. If students do not learn, if they do poorly on exams, for example, they, not the instructor, are to blame.

If this logic sounds familiar, it should. It is the logic of the medical model of disability, a logic that privileges the views of experts (service providers; instructors) and the normative institutions they represent (colleges and universities) over those of non-credentialed people in all their individual, non-normative variety. In this logic, we don't trust students to tell us whether an instructor's teaching is effective just as we don't trust students with disabilities to tell us what will help them learn. We may give them the opportunity to tell us, but the opportunity is more pro forma than genuine. The experts, the instructors and the disability service professionals, are the ones who know, and it is the students' responsibility to do what they say.

In the world of teaching and learning, LCE turns this logic around by asking instructors to make instructional decisions based on their assessment of *student learning* rather than solely on their own experience and expertise in their discipline.

Being learner-centered focuses attention squarely on learning: "on what the student is learning, how the student is learning, the conditions under which the student is learning, whether the student is retaining and applying the learning, and how current learning positions the student for future learning." (Weimer, 2002, p. xvi)

Learner-centered teaching asks instructors to become facilitators of learning rather than simply providers of knowledge, and that requires a different approach to teaching in many disciplines at the college level. Specifically, LCE encourages the following strategies:

- Know the students—Learn where they are starting from, their preconceptions and their prior knowledge.
- Encourage self-directed learning—Allow students to make choices and take responsibility for their learning.
- Develop student self-awareness (metacognition) about their learning—Encourage reflection, integration, and critical thinking.
- Engage students in active, experiential learning.
- Value interactivity, among students and between students and instructor.
- Give and receive feedback often, student-to-student and student-to-faculty as well as faculty-to-student.
- Keep the focus on learning—Recognize the instructor's role as facilitator of learning.
- Choose instructional strategies and techniques appropriate to the goals and learning objectives for the class. (Weimer, in passim)

The LCE movement asks instructors to articulate specific learning goals and measurable learning objectives, to make them explicit to students, and to base plans and decisions related to instruction on them (this is the last strategy in the list above). Instructors who take an LCE approach to their teaching acknowledge the variety of learners in their classroom by consciously examining

the choices they make in designing a course and how those choices impact student learning. An LCE approach also calls for instructors to continually monitor the effectiveness of their choices by using a variety of assessment techniques that allow them to understand the student learning experience in their classes and make adjustments when needed.

It is here that we can see both the intersection and the disjunction between LCE and UD. Both LCE and UD require an instructor to be constantly reflective and flexible; thus, both require more planning ahead of class than many instructors commonly do. But although both LCE and UD focus on the needs of different types of learners, until now LCE has not explicitly included students with disabilities within the array of learners it seeks to serve. At the same time, the UD movement has not explicitly addressed the need for disability service providers to work directly with instructors to help them reconsider their instructional choices so as to make the learning in their courses more widely accessible.

Universal Design, Instructors, and Disability Service Professionals

Traditionally, disability service professionals (DSPs) have been concerned with students with disabilities and have worked with instructors primarily to ensure access to reasonable academic accommodations for qualified students. On my campus, for example, the Disability Resource Center (DRC) has, until relatively recently, focused on evaluating students' documentation, helping students understand what kinds of accommodations they should expect, and making arrangements for those accommodations; for example, the DRC administers more than 12,000 individual exams to students in its testing center each academic year. The accommodations arranged are, for the most part, consumable. That is, they have to be renegotiated for each individual student and usually do not bring about any lasting change in the classes the students attend.

The paradigm of UD as it is applied to instruction suggests that we take a different tack: Our aim should be to help faculty make sustainable changes in their instruction, overall changes that will make learning more accessible for all students—including, students with disabilities—so that no one is singled out to do things differently. This approach asks DSPs to step beyond their traditional role of arranging and ensuring accommodations. It asks them to become consultants to instructors and to use their training in disability-related issues to help instructors reflect upon their teaching and how the choices they make may create barriers for different types of learners in their classes.

DSPs do not need training or experience in teaching or faculty development in order to do this. Indeed, their training in disability services prepares them admirably to be UD consultants. They can help instructors reflect on disability as simply one of the many ways their students differ from each other, help them identify ways that specific instructional choices create barriers to learning for various types of learners (including, but not limited to, students with disabilities), and encourage them to develop and use instructional strategies that will eliminate barriers to learning for most of their students. This does not mean that they are telling faculty how to teach; consultants do not generally tell their clients what to do. As a consultant, a DSP's role would be to ask questions that lead faculty members to acknowledge and address the diversity of learners in their classes through the design of their students' learning experience. The dynamic course design worksheet (see Figure 2) provides one possible process for this type of consultation. (The DRC on my campus is now restructuring its operations at all levels so as to shift its responsibilities from documentation and individual accommodations toward a more consultative model in keeping with the principles of UD.)

Dynamic Course Design

Dynamic course design (see Figure 1) blends the process of articulating goals and objectives that is central to LCE with the idea of identifying the essential elements of a course that is introduced in ADA legislation in the context of jobs to lead faculty toward more universally designed instruction. The worksheet (see Figure 2) maps out a process through which instructors (a) articulate goals, learning objectives or performance outcomes, and assessment measures for a course; (b) identify barriers to student learning and to demonstration of their learning for each objective and assessment measure; (c) identify what is essential to the course, and, where there are barriers; (d) remove them by modifying what all students are asked to do or arrange special accommodations for essential elements that cannot be modified for everyone without changing the nature of the course.

In this process the idea of rethinking a course in order to provide more equitable access to learning for students with disabilities is subsumed within the more general concern to identify and address all types of barriers for all types of students, which is the goal of UD. By doing this, the usual resistance to changing the way an instructor thinks about students with disabilities is sidestepped, if not avoided altogether. This is because asking instructors to identify potential barriers to learning prompts them *to think about all aspects of the course in*

Figure 1. Dynamic course design.

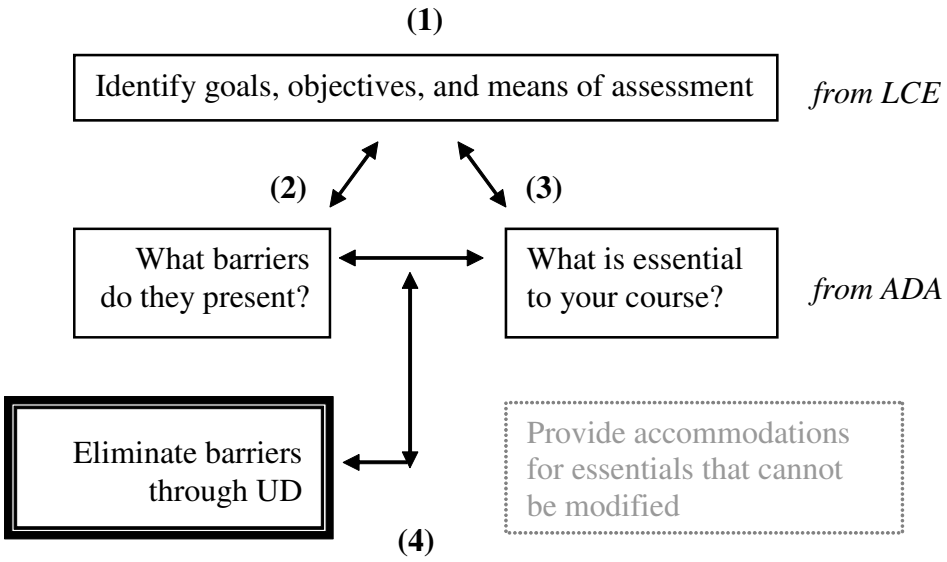

Diagram of the 4-step process of dynamic course design, which incorporates elements of learner-centered education, identification of essential elements based on ADA, and universal design.

relation to the students, not just about the course content or the students in isolation from each other. With goals and objectives written so they can be examined, it is difficult for instructors to avoid the fact that they are teaching in order for students to learn and that the responsibility for learning lies on both sides. In addition, by not singling out students with disabilities for special consideration in terms of course design, this process encourages instructors to think of disability as simply another type of difference.

On the one hand, the idea of "dynamic" course design reflects the fact that the design of instruction is an iterative, not a linear, process. No matter at what point an instructor starts in the process, she will inevitably move back and forth between the steps, over and over again, as the process brings to the surface unexamined assumptions and expectations for her course and her students. On the other hand, "dynamic" reflects the need for adjustments in a course on the daily level; for example, feedback from students may show that more time is needed to work with some content, student interest may suggest a shift in direction, outside forces may dictate a change in schedule or requirements. This kind of responsiveness to both students and the situation is one of the hallmarks of learner-centered teaching. It is also a central characteristic of UD as applied to instruction.

The dynamic course design worksheet is designed to be used by instructors after they have had a brief introduction to the ideas of UD in the context of instruction. Ideally, this would be an introduction that focuses on removing barriers to learning for all types of learners rather than just students with disabilities. For example, having instructors begin in a workshop setting by brainstorming a list of all the ways that the learners in their classes can differ from each other will inevitably yield "ability/disability" as one response, but it will also yield everything from "facility with English" to "access to the Internet." Prompted to name the kinds of students for whom "facility with English" or with language in general might be a barrier, instructors usually mention ESL students and introverted students as well as students with certain kinds of disabilities - whether learning, physical, or cognitive. And they recognize that access to the Internet can be a barrier for students with disabilities as well as for students who come from less advantaged socioeconomic backgrounds who may have little experience with or not have a computer.

At this point instructors are generally ready to throw up their hands in frustration at the thought that they are being asked to remove all barriers for each and every student in their class, individually. They draw this conclusion because the only model they know for removing barriers is the medical model, which calls for individual accommodations. They are now primed to hear about the global types of solutions that a UD approach offers.

Dynamic Course Design Worksheet

This worksheet is designed to help you identify the basic goals, learning objectives (performance measures), and means of ass for your course (or program). Articulating these clearly will, in turn, help you identify your unexamined assumptions about an barriers to student (or participant) success.

Step 1. Write your overall goals for your course in the chart below.

	What do you want your students to *know* as a result of this class?	**What do you want your students to *be able to do* ?**	**What *values* do you wan students to have?**
Learning Goals **-or-** **Learning Outcomes** *with examples from various disciplines*	*Understand the basic elements of a Confucian world view. (Humanities)* *Understand elementary-school classroom behavior based on theories of child development and defend teaching decisions to parents and administrators based on sound developmental principles. (Ed Psych)* *Understand how data are collected in a chemistry lab, how those data are evaluated and how they are reported. (Chemistry)* *Understand common environmental problems, discuss their causes and solutions. (Environmental Science)*	*Work effectively as a member of a group or creative team. (Humanities)* *Be able to defend decisions as teachers to parents and administrators based on sound developmental theory. (Ed Psych)* *Learn tools to create sounds and images. (Media Arts)* *Perform basic lab techniques. (Chemistry)* *Be able to critically analyze texts and historical sources, provide critiques of texts and sources and communicate critiques to others through clear, persuasive, evidence-based prose and speech. (History)*	*Value diverse perspectives. (Humanities)* *Be a thoughtful and confident (Ed Psych)* *Know oneself as a learner.* *Become an independent, creative thinker.* *Develop a deep curiosity abo workings of the natural world. (Chemistry)* *Be a critical thinker.*

Thinking in terms of three types of goals can help you recognize unspoken goals that you may have for your course: knowledg you want your students to know), *skill* (what you want your students to be able to do), and affective goals (what kind of people want your students to be as a result of this class). At this point, think in terms of your learning goals at the broadest level. Ever may not have learning goals in each category.

Figure 2. The dynamic course design worksheet.

Figure 2. continued

Step 2. Write learning objective/s (or performance measures) for each goal in Step 1 above.

	Knowledge	Skills	Attitudes
Learning Objectives **-or-** **Performance Measures** For each goal or outcome, what will I see in my students or their work that demonstrates their attainment of that goal?	***Goal:*** *Understand the basic elements of a Confucian world view. (Humanities)* ***Objective:*** *Students will be able to identify and explain the classical basis for 5 Confucian elements in a new text.* ***Objective:*** *Students will be able to create and justify a scenario in which characters behave in valid Confucian ways.* ***Goal:*** *Identify common environmental problems, their causes and solutions. (Environmental Science)* ***Objective:*** *Students will be able to identify and describe 6 common environmental problems in weekly news reports.* ***Objective:*** *Students will be able to discuss the causes of those problems and pose viable solutions.*	***Goal:*** *Learn tools to create sounds and images. (Media Arts)* ***Objective:*** *Students will be able to control film and video cameras and lenses.* ***Objective:*** *Students will be able to control the properties of 16mm film to achieve a desired exposure in their images.* ***Goal:*** *Perform basic lab techniques. (Chemistry)* ***Objective:*** *Students will be able to perform chemical separations, mass measurement, volume measurement, and spectroscopy.* ***Objective:*** *Students will be able to explain each of those techniques and give examples of when they would be used.*	***Goal:*** *Value diverse perspect (Humanities)* ***Objective:*** *Students will be a compare and contrast differer views of contemporary issues marriage and gender.* ***Objective:*** *Students will be a create and justify a scenario i characters behave in valid Cc ways.* ***Goal:*** *Know oneself as a lear* ***Objective:*** *Students will be a identify their individual learnir preferences and choose note and study strategies that work them.* ***Objective:*** *Students will be a identify their own successful r for staying current with new developments in the appropri discipline or practice.*

Where learning goals are broad and general, *learning objectives* are specific and concrete. To identify a learning objective, ask yourself the question, "What will my students do in order to demonstrate to me that they have achieved this goal?" "Pass a test a learning objective (it's a means of assessment, as described in Step 3 below). If you're going to give a test, what kinds of information, skills, and/or attitudes will the test cover? You might answer "Students will be able to compare and contrast . . . in written paper" or "Students will demonstrate or exhibit proficiency in the use of a microscope." Those will be your learning objective/s. You may have more than one learning objective for each learning goal.

Step 3. Write specific means of assessment for each learning objective above.

	Knowledge	Skills	Attitudes
Means of Assessment What types of activities or products will you ask students to attempt in order to know whether they have achieved your objectives?	***Objective:*** *Students will be able to identify and explain the classical basis for 5 Confucian elements in a new text. (Humanities)* ***Sample assessments*** • *Group activity in class: Define 8 basic Confucian virtues, give examples from readings.* • *Individual writing in class: Identify and explain the Confucian virtue at work in a short scenario. Discuss other scenarios as a class.* • *Group midterm exam: Compare and contrast Confucian elements in a Chinese and a Vietnamese story.*	***Objective:*** *Students will be able to control the properties of 16mm film to achieve a desired exposure in their images. (Media Arts)* ***Sample assessments*** • *Draw a diagram that explains and illustrates the properties of 16mm film as it relates to exposure.* • *Shoot a series of shots that progressively reveals light and the way it interacts with the world. Turn in the film.* • *Write a process paper explaining your shoot: what you hope to reveal, the times you chose, the structure you envision for your film.*	***Objective:*** *Students will be a identify their individual learnin preferences and choose note and study strategies that work them.* ***Sample assessments*** • *Take a learning styles inve Turn in a study plan for the that builds on your learning preferences.* • *At the end of the course wr reflection on your plan and will do differently in the futu* • *Keep track of how and whe work on a research paper. you hand in the paper, han work log with a reflection o well your process worked.*

For each learning objective, ask yourself, "What types of tasks will you ask students to attempt in order to know whether they achieved your objectives?" Assessment tasks can be formal or informal, individual or group. You should have more than one r assessment for each learning objective, as different learners will perform better in different mediums, time frames, and enviror The number of assessments that you do during a course will not be unwieldy if you remember that one well-designed assessme can serve as the means of assessment for more than one learning objective and that not all tasks must be graded.

Figure 2. continued

Step 4. Now begin asking yourself:

1. What essential competencies must a student have in order to accomplish this learning goal (with its attendant objectives and of assessment)? How will a student gain each competency? Will it be developed in the course? If so, how? Should students that competency with them to the course? If they don't, how will they gain it?
2. What other possible barriers are there to a student's successful completion of each assessment, objective, and goal? Conside
    - Physical environment and mobility, sight, sound.
    - Language: Ability to communicate immediately and effectively in speech, writing; ability to receive information
    - Time.
    - Personal differences: socioeconomics, culture, age, gender, preparedness, learning history, emotional history . . .
    - Teaching style, presence or persona of instructor; learning differences and preferences.

If you have identified any barriers that might prevent students in your class from successfully attaining your learning what do you do?

Your answer might be:

- Find a solution that will eliminate the barrier. (Universal Design)
- Change or delete the learning goal (or objective or assessment) that presents a barrier. (Universal Design)
- Allow a particular student to fulfill the outcome through some alternative means. (special accommodation)

If changing or deleting one of your learning goals, objectives or assessments appears to be the only way to a UD so

Would this change allow you to maintain the rigor and disciplinary requirements of your course?

→ If so, then you should make that change. This may require you to rethink the way you "usually" do things in your course or discipline.

Would this change compromise your course in ways unacceptable to you or to your program or discipline?

→ If so, a UD solution may not be a good choice for your course. YOU, the instructor, must decide this.

Remember that:

- **Barriers to student success that are left in place are just that, barriers.**
- **Special accommodations are consumable, single students out, and do not always reach all the stude who are affected by barriers to learning.**
- **UD solutions are sustainable and give students more equitable opportunity to demonstrate their learr**

Figure 2. continued

Introducing UD through its history in the built environment works today as almost everyone is familiar with some of the common examples: ramps, automatic doors, closed captioning, dual-height water fountains, and so on. And instructors know from personal experience that these UD solutions are useful for all kinds of people. They can also understand that these solutions are now a part of the original design of buildings and other built facilities, which alleviates the need for expensive and time-consuming retrofitting to make inaccessible designs accessible. In other words, they can see that it makes sense to plan accessibility in from the beginning.

By this time in the discussion, they're beginning to think about their own instruction. Giving instructors time to discuss UD solutions to the list of barriers to learning that they created earlier will give them general examples to work from as they rethink the design of their own classes. The Dynamic Course Design Worksheet can be used as a heuristic device to aid in that reexamination.

The Worksheet

The Dynamic Course Design worksheet is designed to help instructors systematically identify and examine their expectations for student learning in a course and to prompt them to design their course so as to make the learning accessible to a variety of types of students. Although the worksheet and explanation provided here use the vocabulary of teaching and course design, the process can be generalized for use in planning any kind of presentation, meeting, or workshop to improve accessibility of the learning experience. The remainder of this article will discuss each step in the worksheet separately. Please remember that the design of a course (or presentation, meeting, workshop) is a complex process that does not proceed in an orderly, linear fashion.

Step 1. Identifying Overall Goals

It is not hard for most instructors to cite some learning goals (also called learning outcomes) for any course they teach, but this first step of the worksheet asks instructors to articulate goals in three categories: knowledge goals (What do you want your students to know as a result of this class?); skill goals (What do you want your students to be able to do?); and affective goals (What kind of people do you want your students to become?) (From Bloom's taxonomy of learning, in Santrock, 2004, pp. 380-383). Most instructors at the college level are used to thinking in terms of knowledge goals such as "Understand the basic elements of a Confucian worldview," "Understand common environmental problems, their causes and solutions," and "Understand how data are collected in a chemistry lab, how those data are evaluated, and how they are reported." And most can identify a set of skill goals commonly articulated in their institution as well as skills associated with their discipline. "Work effectively as a member of a group or creative team," "Learn tools to create sounds and images," and "Perform basic lab techniques" are examples of skill goals.

Identifying affective goals for a course is more difficult for many postsecondary instructors. In fact, some may believe that they have no affective goals or that affective goals have no place in the formal academic disciplines at the postsecondary level. We have no business telling our students what kind of people they should become, these instructors may reason. However, I would argue that college-level instructors have many affective goals for their courses, especially for courses at the general education or introductory level. Statements in institution- and program-level mission statements such as "Value diverse perspectives," "Become an independent, creative thinker," "Develop a deep curiosity about the natural world," and "Know oneself as a learner" are examples of common affective goals that inform many college-level courses. Moreover, I would argue that the much-touted goal of helping students become critical thinkers, which is usually understood to be a skill (how to think critically), includes a strong affective component, as internalization of a value of any kind involves an affective component. For example, if students simply learn to use the steps in the process of critical thinking when assigned but do not have the inclination to use that process of their own accord whenever confronted by a new situation, we have not succeeded in making them critical thinkers. Students must master the process of critical thinking (skill goal), but they must also develop the habit of mind to use that process when appropriate (affective goal).

Step 2. Determining Learning Objectives or Performance Measures

Learning objectives (alternatively called performance measures) articulate what an instructor looks for in student behavior or work that demonstrates achievement of particular goals. That is, objectives are measurable. Whereas the knowledge goal "Understand the basic elements of a Confucian world view" is quite general, leaving both students and instructor without much idea of how it will be demonstrated, a parallel learning objective such as "Students will be able to identify and explain five Confucian elements in a new text" gives specific parameters for evaluating student achievement of that goal. We might want to add to this an objective that re-

quires students to use a higher level of cognitive learning, such as "Students will be able to create and justify a scenario in which characters behave in valid Confucian ways."

One reason for the LCE emphasis on articulating goals and objectives is the transparency that it brings. That is, goal-driven teaching gives everyone the opportunity to understand the instructor's intent and the ways the various aspects of a course fit together if the goals are made explicit to all participants. And carefully defined goals and objectives give us a way to document or measure the learning that is happening in a course. Another reason for this emphasis in the LCE movement is the credibility and accountability that documentation affords. This kind of measurement is useful to instructors as they make course-related decisions; to students, who can see that they are learning or understand where they need help; and to administrators, who need such data as they make decisions with wide-ranging impact. But the most important reason is that the process of articulating goals and specific learning objectives forces an instructor to focus on what and how students are learning. Huba and Freed's Learner-Centered Assessment on College Campus (1999) is a useful resource on the process of developing specific goals and objectives.

Step 3. Designing Assessment Activities

Quizzes, timed tests taken in class, and term papers are the standard assessment tools of the traditional college instructor who delivers new material to students, tests to see if they have learned it, and then moves on. Most experienced instructors can follow this formula in their discipline with their eyes closed—and that is pretty much what they are doing in terms of actually ensuring that their students are learning. This step in the process of dynamic course design asks instructors to design assessment activities that are keyed specifically to their learning objectives, for this is the only way in which we can know whether students are learning what we think it is important for them to learn. If instructors have identified specific learning objectives and published them in their course syllabus, students will have a better idea of what to expect in a course and what to aim for in terms of mastery of course material.

It is important that instructors assess student learning in a variety of formats, media, time frames, and environments. This is because different types of learners often perform differently on different types of assessment tasks, regardless of how well they know the material. Allowing students to choose from several different ways to complete the same assignment is one way to give each student the opportunity to demonstrate learning in his or her own way. Another strategy is to assign a variety of types of tasks to all students across the semester, which gives every student a chance to be successful on something. Resources such as Angelo and Cross's *Classroom Assessment Techniques: A Handbook for College Teachers* (1993) provide examples of many kinds of assessment tasks that can be used in the classroom.

It is also important for instructors to plan more than one assessment task for each learning objective. This accomplishes several things. It allows students the opportunity to demonstrate their knowledge on several different occasions and in several different ways; this triangulation effect will yield a richer understanding of students' grasp of course material. It also allows instructors to assess students' deepening command of the same material over time. And it reinforces for students the idea that they are responsible for longer-term mastery of course material rather than the memorize-for-the-test-then-forget type of learning for which they often seem to settle.

Step 4. Moving Toward a Universally Designed Course

The last step of the dynamic course design process is actually a series of steps that leads instructors to reexamine everything they have done to this point from the standpoint of barriers to student learning. Here is a possible plan for helping instructors with this work:

1. Begin by asking instructors to identify potential barriers to students' successful achievement of the learning goals, objectives, and assessment tasks they have articulated. Are competencies assumed and not planned to be taught in the course? Are some assessment tasks difficult for some students for reasons that may be unrelated to their understanding of course material? Have instructors make a list of potential barriers and the learners who may be affected by each barrier.
2. By way of example, ask instructors to think about the potential barriers presented by an in-class essay exam. As a test of what has been learned in a course, this format assumes (a) that students have a command of English appropriate to the necessary level of expression and the limited amount of time allowed; (b) that they are able to formulate their thoughts quickly and then write or type quickly, legibly, and for a long enough period of time to demonstrate their understanding; (c) that they can work effectively in the classroom environment (consider space, lighting, sound, distraction) and with the materials provided (size of font, contrast, color); and so on. This mainstay of college-level assessment is fraught with potential barriers, as disability service professionals well know.

3. Now ask instructors how essential those requirements of the most common testing situation are to their course. In a course in the Humanities, does it matter whether it takes a student 20 minutes or 40 minutes to produce a complete answer to an essay question, an answer that demonstrates the full extent of the student's learning? Does it matter in Nursing or in Engineering? That is, is *time* itself an essential part of the learning in those disciplines? Is *writing*, the physical ability to type or to hand write, a necessary part of being educated in a particular discipline? Do we require students to take timed exams and to write (rather than speak or perform or illustrate) their answers merely because it is tradition to do so, or for reasons directly related to what we want students to learn? What about in Chemistry or in Media Arts? Each instructor will answer such questions according to his or her disciplinary training and personal experience.

It is important for instructors to analyze closely what it is that they are actually requiring of students, to acknowledge why they are doing so, and to evaluate how essential those requirements are to students' learning in their course, program, and discipline. Intellectual honesty in this process is a must, for it would defeat the purpose if an instructor were to simply say that everything now required in a course is essential and thereby avoid making any changes. Elements that are essential must, by definition, remain in the course, but perhaps they can be changed in form so as to allow students to more readily demonstrate their learning. Timed exams can be done by groups of students rather than individuals, for example, or the stakes can be lowered on timed exams by testing more frequently, with each exam worth fewer points. Essential elements of a course that cannot be changed without compromising the integrity of the disciplinary learning may remain barriers for some learners. At this juncture the solution is special accommodations for individual learners with documented disabilities, while other students are left to fend for themselves.

It is equally important to recognize that the kinds of changes that the process of dynamic course design encourages instructors to make cannot, in reality, happen all at once. This paper and worksheet present an ideal process of course redesign that would be daunting even to the most committed faculty member. Lasting changes in how one conceives of disability, in how one conceives of one's role as a teacher, and in how one conceives of students' responsibility in the classroom come only through deep reflection, firm commitment, willingness to listen to others and to take risks, and hard work over time. For most instructors, the way to start is with one small change at a time.

In the context of learner-centered education, UD asks instructors to consider their responsibility to support the learning of all their many, different learners. Universally designed instruction accomplishes this by providing students with multiple means of acquiring information and of expressing what they have learned, and by allowing students to engage with a course in different ways (CAST). While the UD movement provides the impetus for ensuring equitable access to learning to all our students, faculty development units and their professional staff have the expertise in teaching, learning, and assessment that can help instructors make this happen. They are potentially powerful allies in the task of leading instructors to understand and implement UD in their teaching, although they may have to be educated about disability and UD. As the greater academic community learns to include people with disabilities in its thinking and planning about the teaching and learning environments that we design, we will make these environments more effective for *all* learners - at the same time and from the beginning - without the need for so many retroactive, individual accommodations.

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